FIG.1A

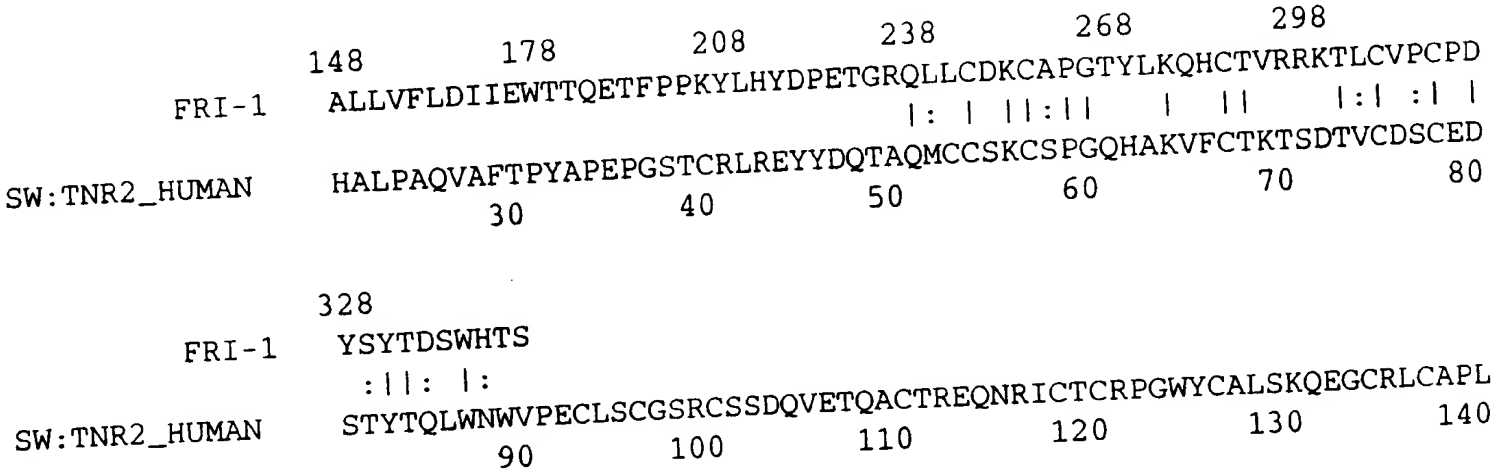


FIG.1B

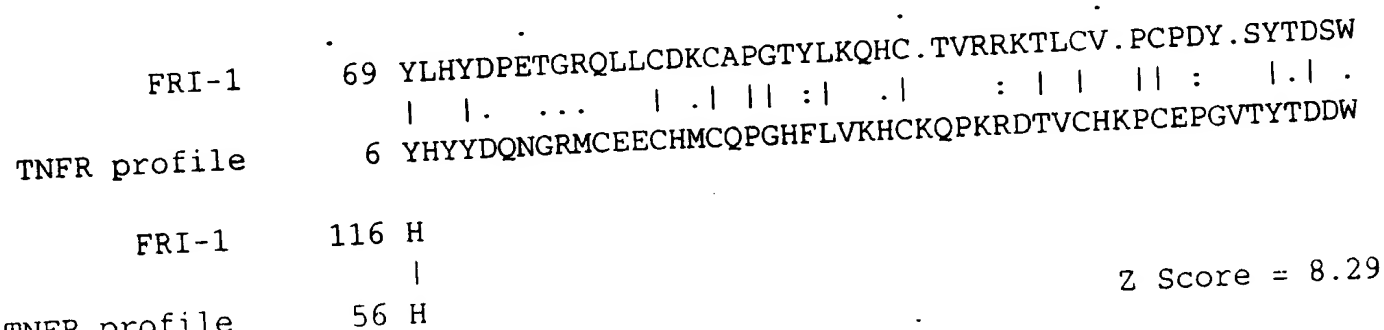


FIG. IC

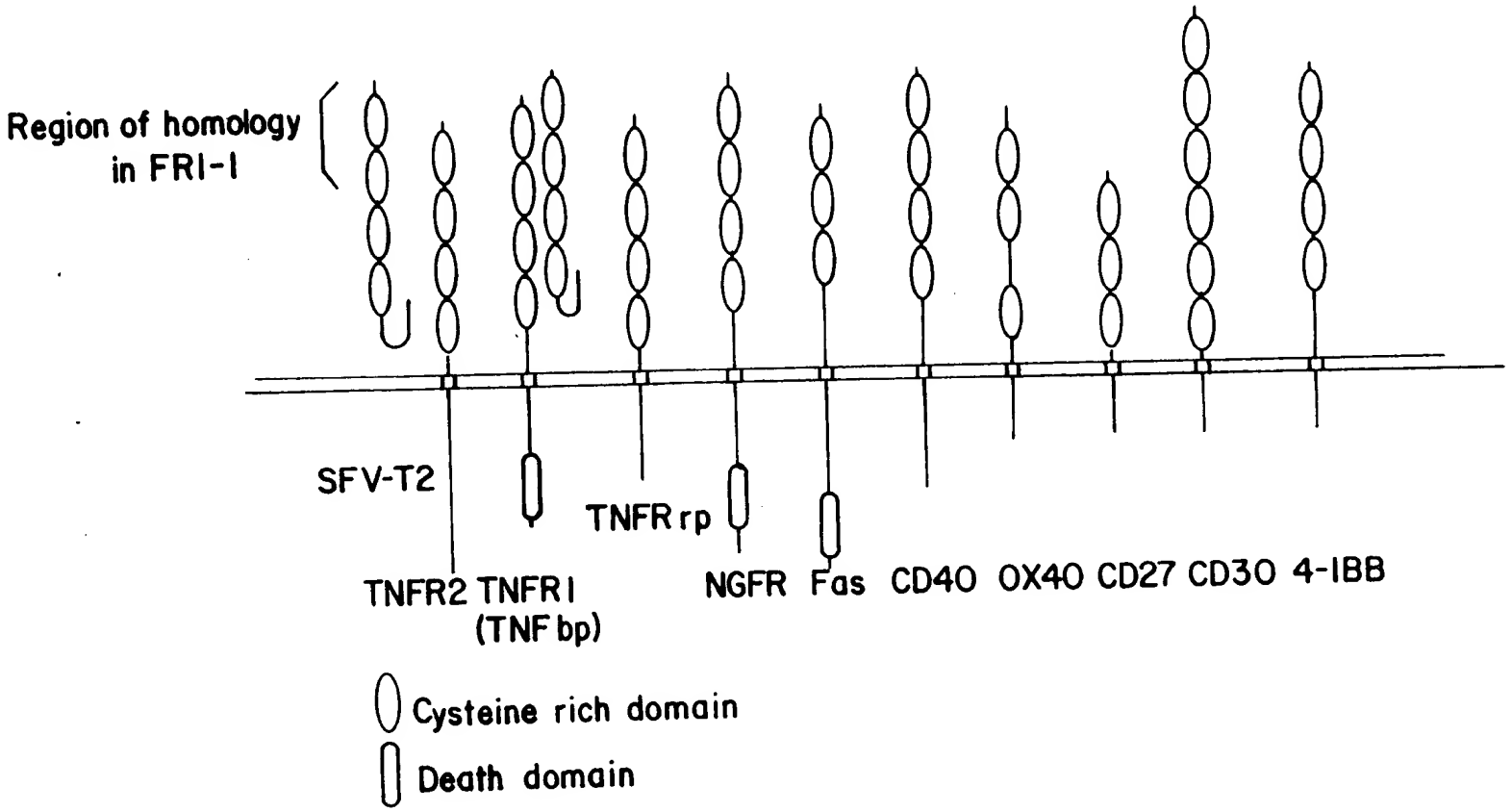


FIG.2A

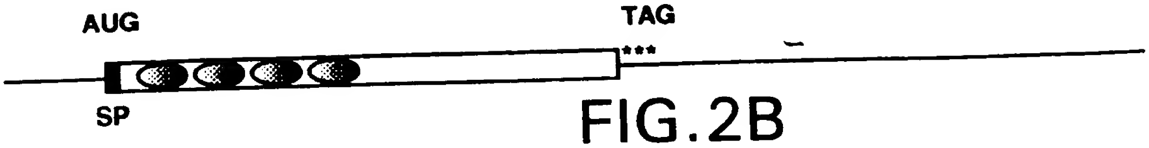


FIG.2B

10 30 50
ATCAAAGGCAGGGCATACTTCCTGTTGCCCAGACCTTATATAAAACGTCATGTTCGCCTG

70 90 110
GGCAGCAGAGAAGCACCTAGCACTGGCCCAGCGGCTGCCGCCTGAGGTTTCCAGAGGACC

130 150 170
ACAATGAACAAGTGGCTGTGCTGTGCACTCCTGGTGTTCTTGGACATCATTGAATGGACA
M N K W L C C A L L V F L D I I E W T

190 210 230
ACCCAGGAAACCTTTCCTCCAAAATACTTGCATTATGACCCAGAAACCGGACGTCAGCTC
T Q E T F P P K Y L H Y D P E T G R Q L

250 270 290
TTGTGTGACAAATGTGCTCCTGGCACCTACCTAAAACAGCACTGCACAGTCAGGAGGAAG
L C D K C A P G T Y L K Q H C T V R R K

310 330 350
ACACTGTGTGTCCCTTGCCCTGACTACTCTTATACAGACAGCTGGCACACGAGTGATGAA
T L C V P C P D Y S Y T D S W H T S D E

370 390 410
TGCGTGTACTGCAGCCCCGTGTGCAAGGAACTGCAGACCGTGAAACAGGAGTGCAACCGC
C V Y C S P V C K E L Q T V K Q E C **N** R

430 450 470
ACCCACAACCGAGTGTGCGAATGTGAGGAAGGGCGCTACCTGGAGCTCGAATTCTGCTTG
T H N R V C E C E E G R Y L E L E F C L

490 510 530
AAGCACCGGAGCTGTCCCCCAGGCTTGGGTGTGCTGCAGGCTGGGACCCCAGAGCGAAAC
K H R S C P P G L G V L Q A G T P E R N

550 570 590
ACGGTTTGCAAAAGATGTCCGGATGGGTTCTTCTCAGGTGAGACGTCATCGAAAGCACCC
T V C K R C P D G F F S G E T S S K A P

610 630 650
TGTAGGAAACACACCAACTGCAGCTCACTTGGCCTCCTGCTAATTCAGAAAGGAAATGCA
C R K H T **N** C S S L G L L L I Q K G **N** A

670 690 710
ACACATGACAATGTATGTTCCGGAAACAGAGAAGCAACTCAAAATTGTGGAATAGATGTC
T H D N V C S G N R E A T Q N C G I D V

730 750 770
ACCCTGTGCGAAGAGGCATTCTTCAGGTTTGCTGTGCCTACCAAGATTATACCGAATTGG
T L C E E A F F R F A V P T K I I P N W

790 810 830
CTGAGTGTTCTGGTGGACAGTTTGCCTGGGACCAAAGTGAATGCAGAGAGTGTAGAGAGG
L S V L V D S L P G T K V N A E S V E R

850 870 890
ATAAAACGGAGACACAGCTCGCAAGAGCAAACTTTCCAGCTACTTAAGCTGTGGAAGCAT
I K R R H S S Q E Q T F Q L L K L W K H

910 930 950
CAAAACAGAGACCAGGAAATGGTGAAGAAGATCATCCAAGACATTGACCTCTGTGAAAGC
Q N R D Q E M V K K I I Q D I D L C E S

970 990 1010
AGTGTGCAACGGCATATCGGCCACGCGAACCTCACCACAGAGCAGCTCCGCATCTTGATG
S V Q R H I G H A **N** L T T E Q L R I L M

FIG.2C

1030 1050 1070
GAGAGCTTGCCTGGGAAGAAGATCAGCCCAGACGAGATTGAGAGAACGAGAAAGACCTGC
E S L P G K K I S P D E I E R T R K T C
1090 1110 1130
AAACCCAGCGAGCAGCTCCTGAAGCTACTGAGCTTGTGGAGGATCAAAAATGGAGACCAA
K P S E Q L L K L L S L W R I K N G D Q
1150 1170 1190
GACACCTTGAAGGGCCTGATGTACGCACTCAAGCACTTGAAAGCATACCACTTTCCCAAA
D T L K G L M Y A L K H L K A Y H F P K
1210 1230 1250
ACCGTCACCCACAGTCTGAGGAAGACCATCAGGTTCTTGCACAGCTTCACCATGTACCGA
T V T H S L R K T I R F L H S F T M Y R
1270 1290 1310
TTGTATCAGAAACTCTTTCTAGAAATGATAGGGAATCAGGTTCAATCAGTGAAGATAAGC
L Y Q K L F L E M I G N Q V Q S V K I S
1330 1350 1370
TGCTTATAGTTAGGAATGGTCACTGGGCTGTTTCTTCAGGATGGGCCAACACTGATGGAG
C L
1390 1410 1430
CAGATGGCTGCTTCTCCGGCTCTTGAAATGGCAGTTGATTCCTTTCTCATCAGTTGGTGG
1450 1470 1490
GAATGAAGATCCTCCAGCCCAACACACACACTGGGGAGTCTGAGTCAGGAGAGTGAGGCA
1510 1530 1550
GGCTATTTGATAATTGTGCAAAGCTGCCAGGTGTACACCTAGAAAGTCAAGCACCCTGAG
1570 1590 1610
AAAGAGGATATTTTTATAACCTCAAACATAGGCCCTTTCCTTCCTCTCCTTATGGATGAG
1630 1650 1670
TACTCAGAAGGCTTCTACTATCTTCTGTGTCATCCCTAGATGAAGGCCTCTTTTATTTAT
1690 1710 1730
TTTTTTATTCTTTTTTTCGGAGCTGGGGACCGAACCCAGGGCCTTGCGCTTGCGAGGCAA
1750 1770 1790
GTGCTCTACCACTGAGCTAAATCTCCAACCCCTGAAGGCCTCTTTCTTTCTGCCTCTGAT
1810 1830 1850
AGTCTATGACATTCTTTTTTCTACAATTCGTATCAGGTGCACGAGCCTTATCCCATTTGT
1870 1890 1910
AGGTTTCTAGGCAAGTTGACCGTTAGCTATTTTTCCCTCTGAAGATTTGATTCGAGTTGC
1930 1950 1970
AGACTTGGCTAGACAAGCAGGGGTAGGTTATGGTAGTTTATTTAACAGACTGCCACCAGG
1990 2010 2030
AGTCCAGTGTTTCTTGTTCCTCTGTAGTTGTACCTAAGCTGACTCCAAGTACATTTAGTA
2050 2070 2090
TGAAAAATAATCAACAAATTTTATTCCTTCTATCAACATTGGCTAGCTTTGTTTCAGGGC
2110 2130 2150
ACTAAAAGAAACTACTATATGGAGAAAGAATTGATATTGCCCCCAACGTTCAACAACCCA
2170 2190 2210
ATAGTTTATCCAGCTGTCATGCCTGGTTCAGTGTCTACTGACTATGCGCCCTCTTATTAC
2230 2250 2270
TGCATGCAGTAATTCAACTGGAAATAGTAATAATAATAATAGAAATAAAATCTAGACTCC
2290 2310 2330
ATTGGATCTCTCTGAATATGGGAATATCTAACTTAAGAAGCTTTGAGATTTCAGTTGTGT
2350 2370 2390
TAAAGGCTTTTATTAAAAAGCTGATGCTCTTCTGTAAAAGTTACTAATATATCTGTAAGA
2410 2430
CTATTACAGTATTGCTATTTATATCCATCCAG

FIG.2D

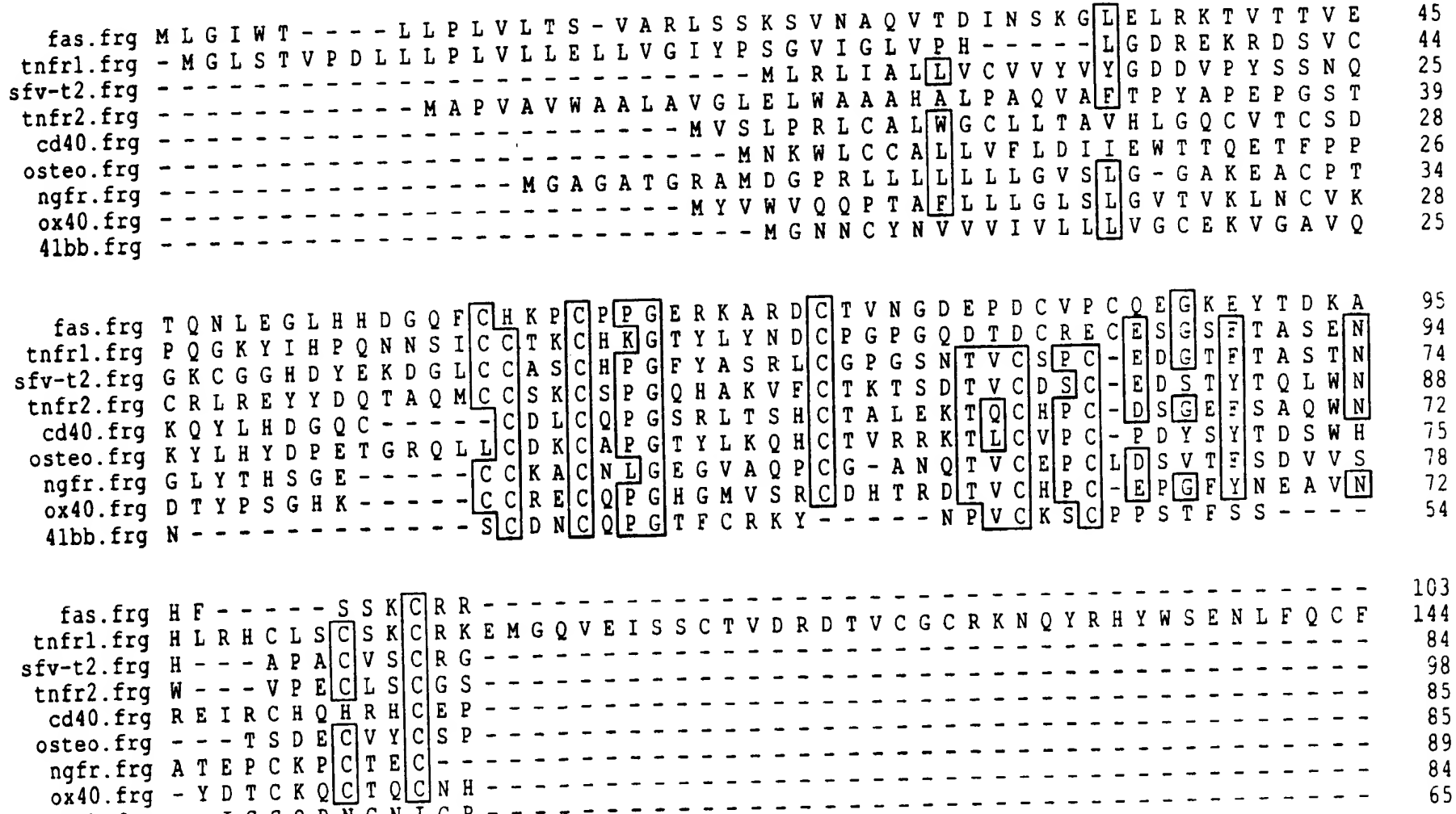


FIG.2E

FIG.3A
FIG.3B
FIG.3C
FIG.3D
FIG.3E

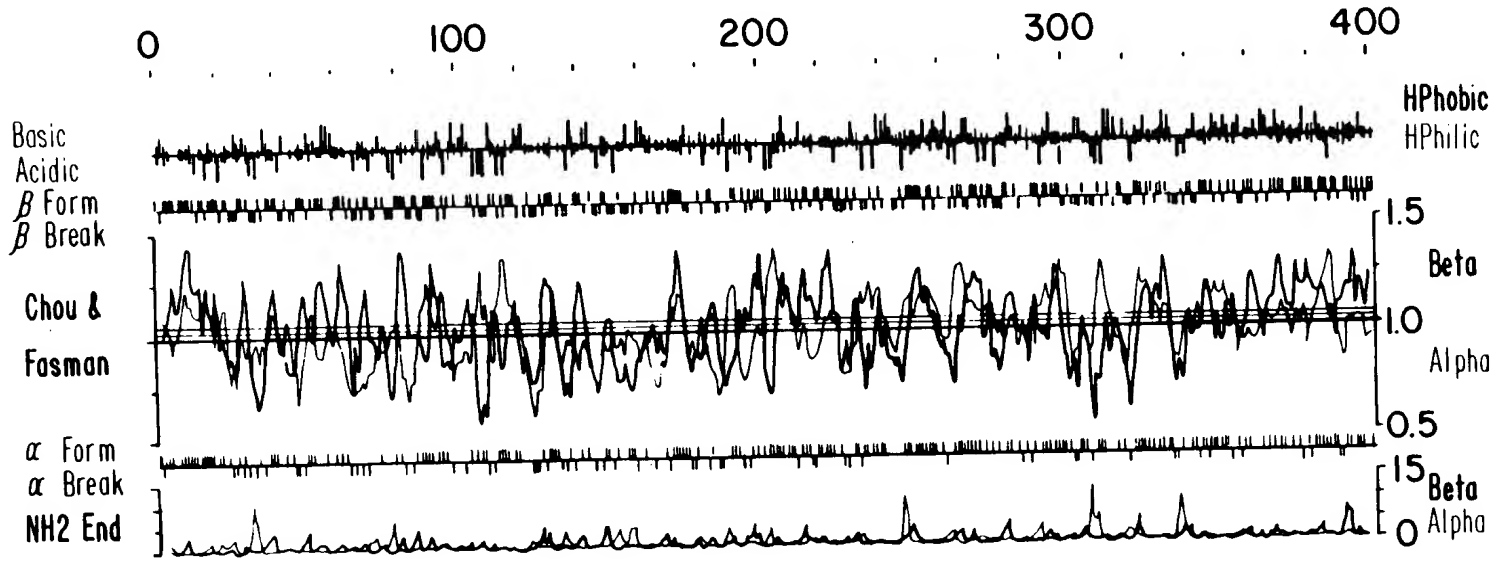


FIG.3F

FIG.3G

FIG.3H

FIG.3I

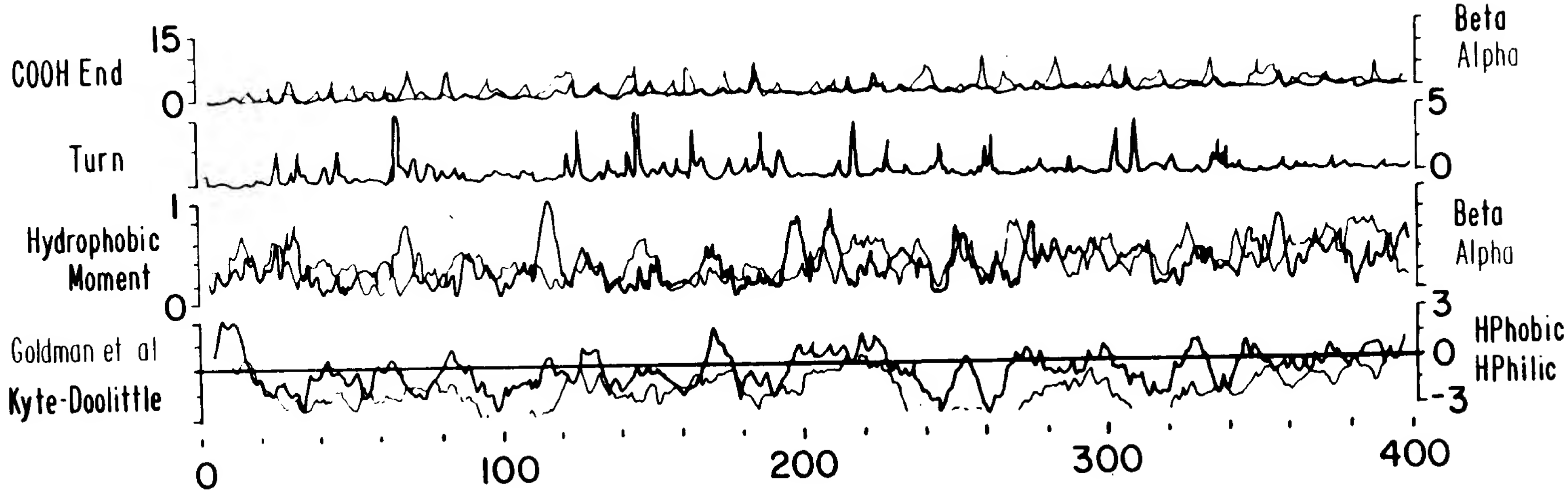


FIG.4A

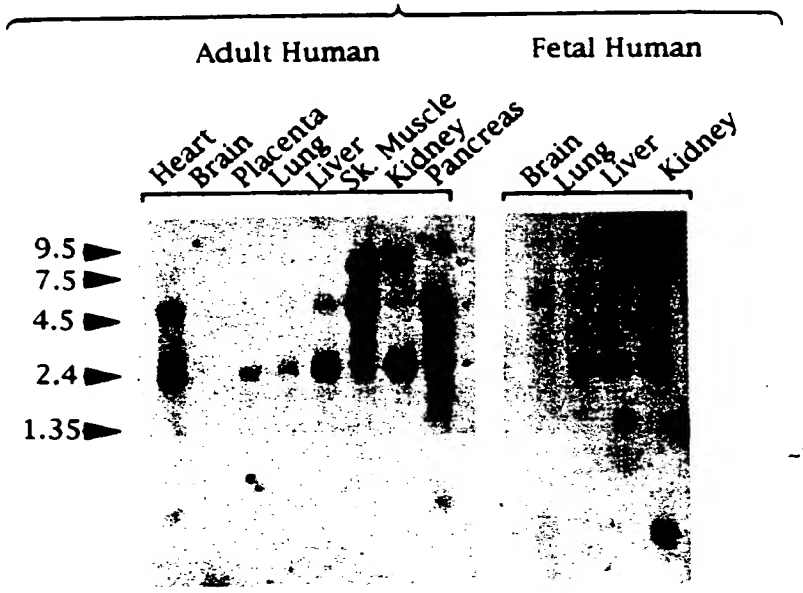

Adult Human
Fetal Human
Heart
Brain
Placenta
Lung
Liver
Sk. Muscle
Kidney
Pancreas
Brain
Lung
Liver
Kidney
9.5
7.5
4.5
2.4
1.35

FIG.4B

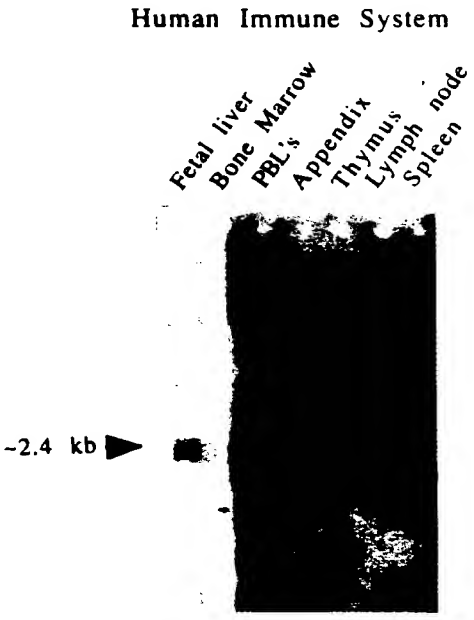
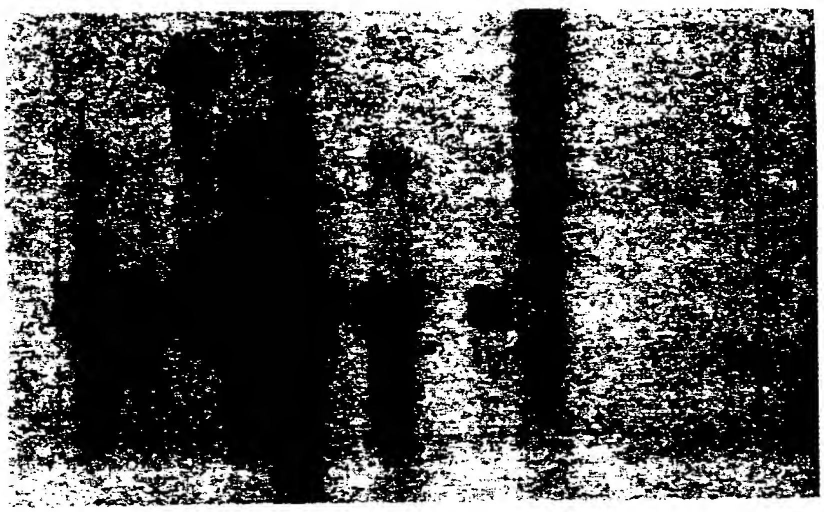

Human Immune System
Fetal liver
Bone Marrow
PBL's
Appendix
Thymus
Lymph node
Spleen
~2.4 kb

FIG.5



2 11 16 17 22 28 33 38 45 Kb 1 12 18 30

Transgenic Founders Controls

FIG.6A

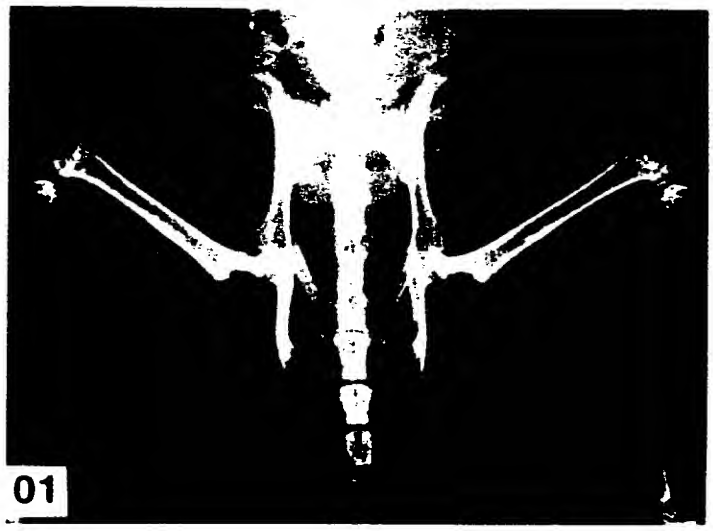


FIG.6B

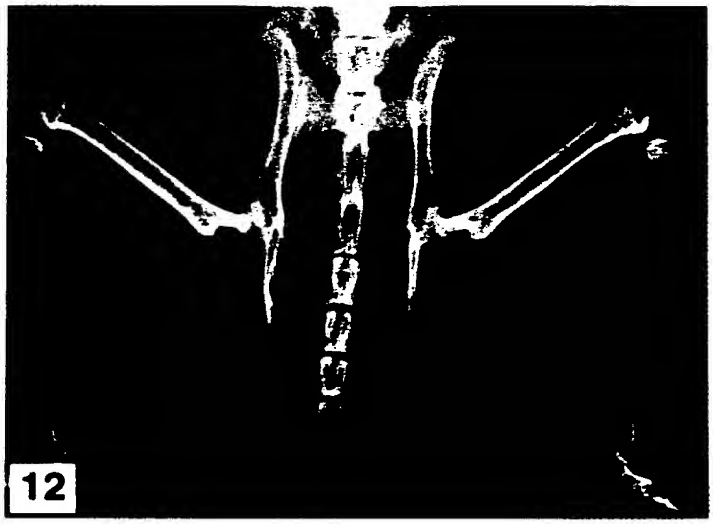


FIG.6C

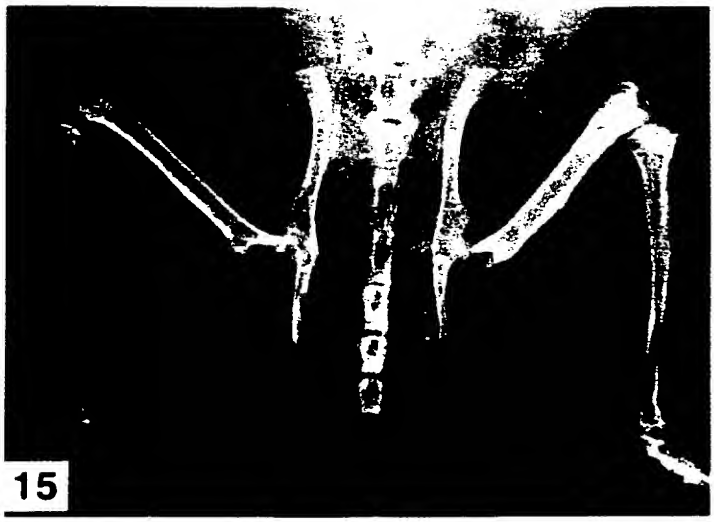


FIG.6D

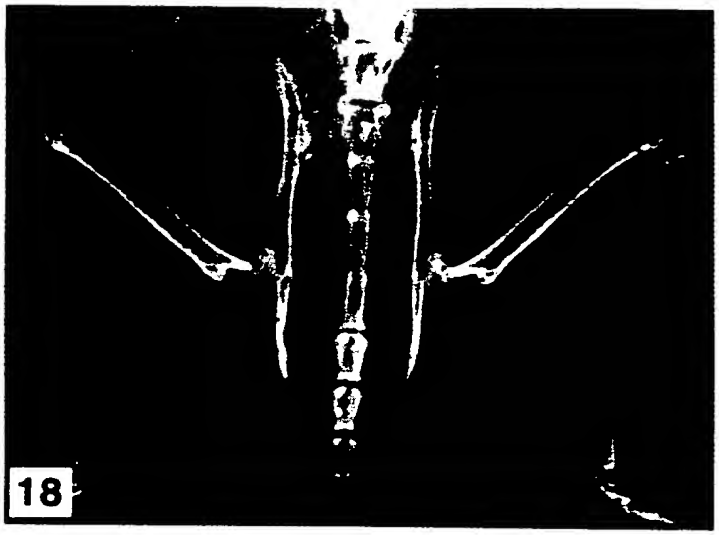


FIG.6E

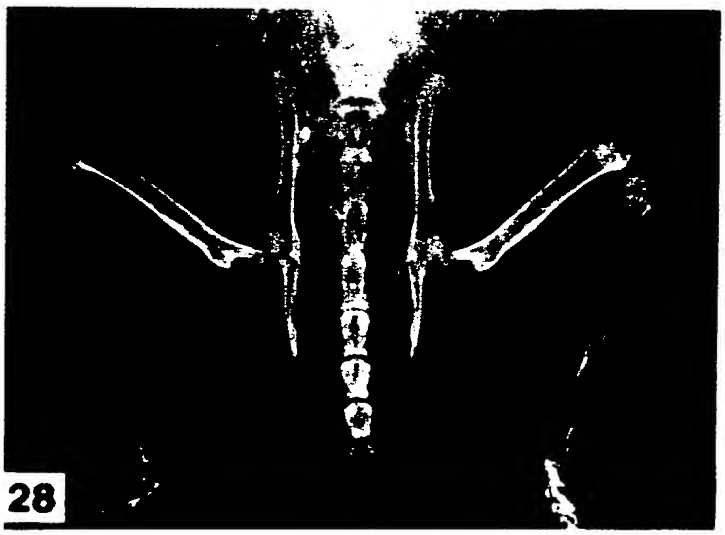


FIG.6F

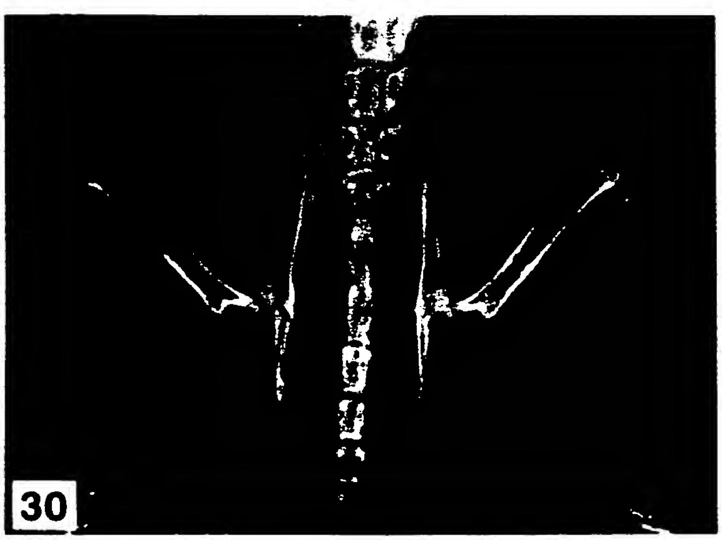


FIG.6G

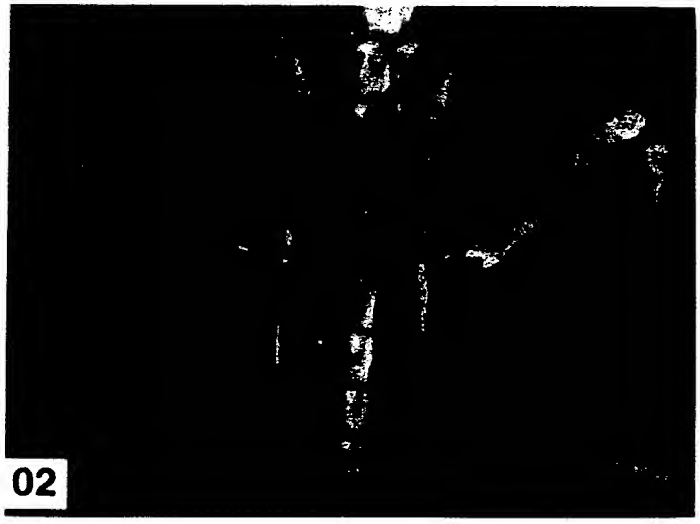


FIG.6H

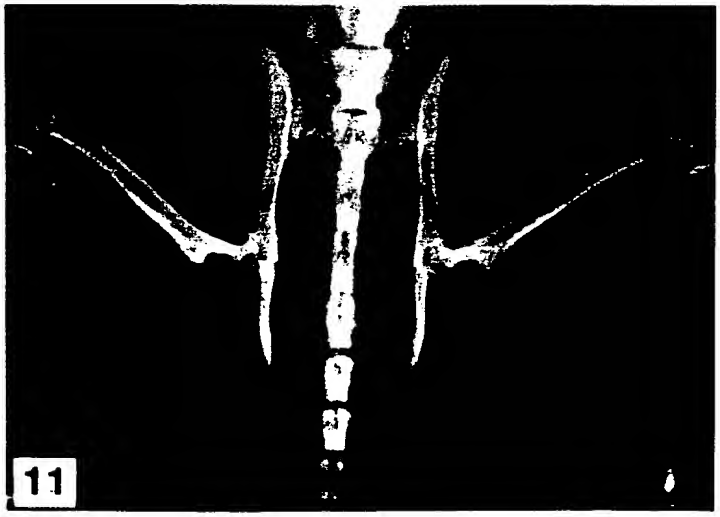


FIG.6I

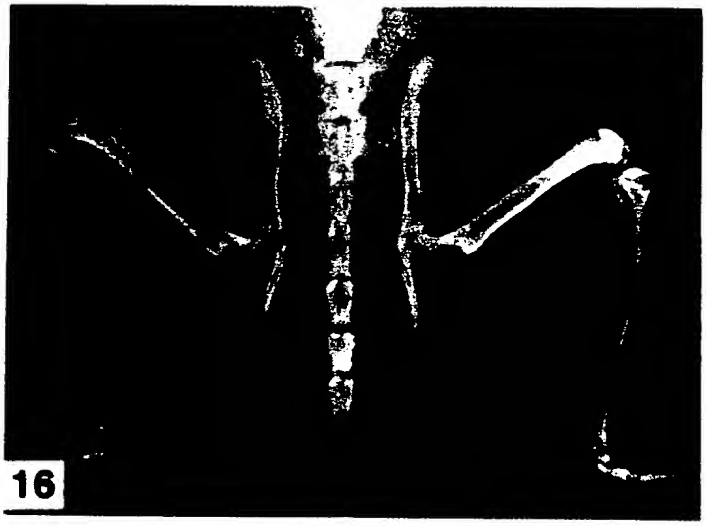


FIG.6J

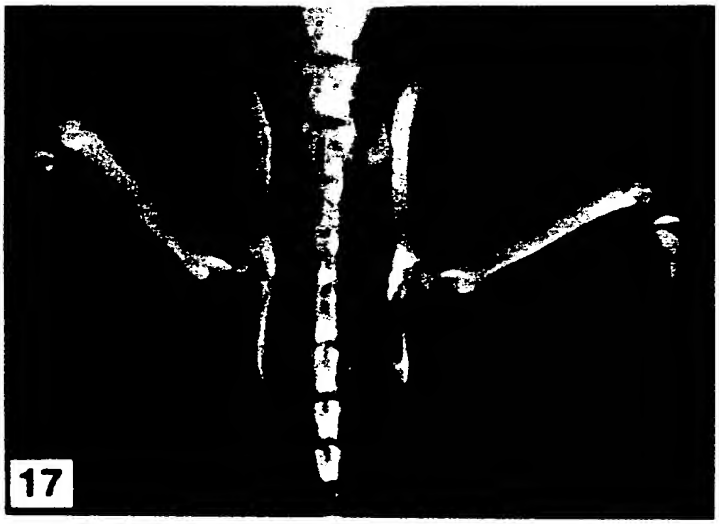


FIG.7A

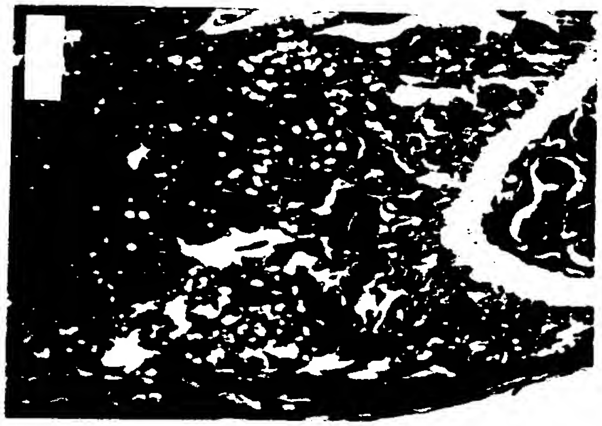


FIG.7B

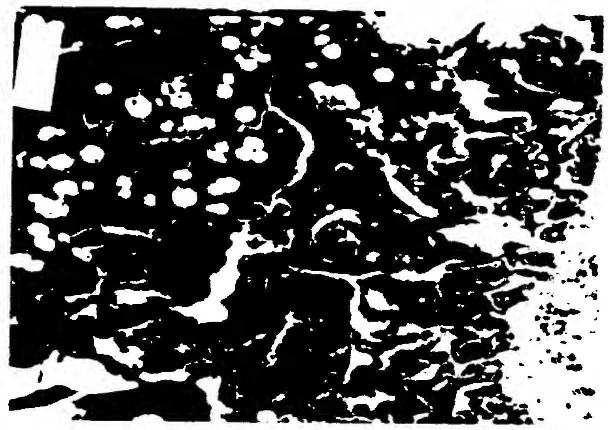


FIG.7C

FIG.7D

FIG.7E

FIG.7F

FIG.7G

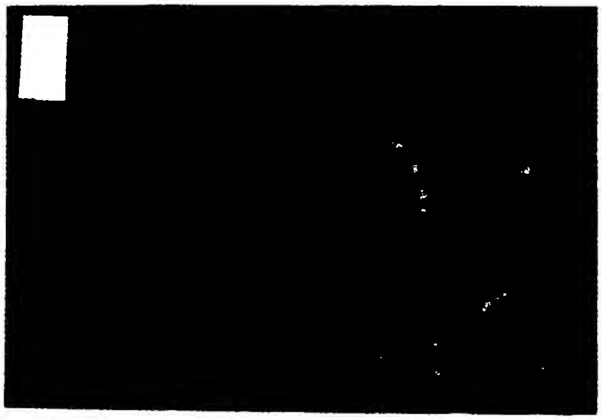


FIG.7H

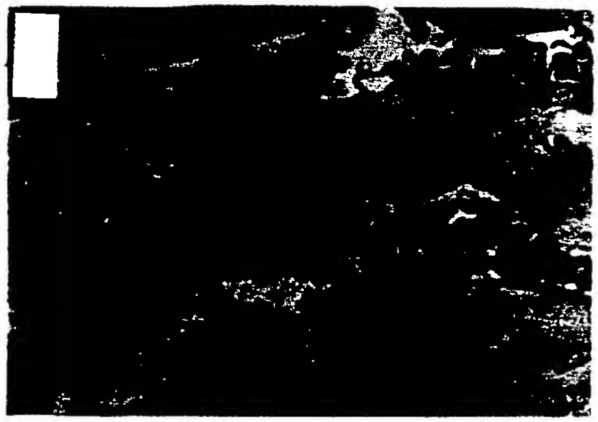


FIG.8A

FIG.8B

FIG.8C

FIG.8D

FIG.9A

```
          10                  30                  50
CCTTATATAARACGTCATGATTGCCTGGGCTGCAGAGACGCACCTAGCACTGACCCAGCG
          70                  90                 110
GCTGCCTCCTGAGGTTTCCCGAGGACCACAATGAACAAGTGGCTGTGCTGCGCACTCCTG
                                  M  N  K  W  L  C  C  A  L  L
         130                 150                 170
GTGCTCCTGGACATCATTGAATGGACAACCCAGGAAACCCTTCCTCCAAAGTACTTGCAT
V  L  L  D  I  I  E  W  T  T  Q  E  T  L  P  P  K  Y  L  H
         190                 210                 230
TATGACCCAGAAACTGGTCATCAGCTCCTGTGTGACAAATGTGCTCCTGGCACCTACCTA
Y  D  P  E  T  G  H  Q  L  L  C  D  K  C  A  P  G  T  Y  L
         250                 270                 290
AAACAGCACTGCACAGTGAGGAGGAAGACATTGTGTGTCCCTTGCCCTGACCACTCTTAT
K  Q  H  C  T  V  R  R  K  T  L  C  V  P  C  P  D  H  S  Y
         310                 330                 350
ACGGACAGCTGGCACACCAGTGATGAGTGTGTGTATTGCAGCCCAGTGTGCAAGGAACTG
T  D  S  W  H  T  S  D  E  C  V  Y  C  S  P  V  C  K  E  L
         370                 390                 410
CAGTCCGTGAAGCAGGAGTGCAACCGCACCCACAACCGAGTGTGTGAGTGTGAGGAAGGG
Q  S  V  K  Q  E  C  N  R  T  H  N  R  V  C  E  C  E  E  G
         430                 450                 470
CGTTACCTGGAGATCGAATTCTGCTTGAAGCACCGGAGCTGTCCCCCGGGCTCCGGCGTG
R  Y  L  E  I  E  F  C  L  K  H  R  S  C  P  P  G  S  G  V
         490                 510                 530
GTGCAAGCTGGAACCCCAGAGCGAAACACAGTTTGCAAAAAATGTCCAGATGGGTTCTTC
V  Q  A  G  T  P  E  R  N  T  V  C  K  K  C  P  D  G  F  F
         550                 570                 590
TCAGGTGAGACTTCATCGAAAGCACCCTGTATAAAACACACGAACTGCAGCACATTTGGC
S  G  E  T  S  S  K  A  P  C  I  K  H  T  N  C  S  T  F  G
         610                 630                 650
CTCCTGCTAATTCAGAAAGGAAATGCAACACATGACAACGTGTGTTCCGGAAACAGAGAA
L  L  L  I  Q  K  G  N  A  T  H  D  N  V  C  S  G  N  R  E
         670                 690                 710
GCCACGCAAAAGTGTGGAATAGATGTCACCCTGTGTGAAGAGGCCTTCTTCAGGTTTGCT
A  T  Q  K  C  G  I  D  V  T  L  C  E  E  A  F  F  R  F  A
         730                 750                 770
GTTCCTACCAAGATTATACCAAATTGGCTGAGTGTTTTGGTGGACAGTTTGCCTGGGACC
V  P  T  K  I  I  P  N  W  L  S  V  L  V  D  S  L  P  G  T
```

FIG.9B

790 810 830

AAAGTGAATGCCGAGAGTGTAGAGAGGATAAAACGGAGACACAGCTCACAAGAGCAAACC

K V N A E S V E R I K R R H S S Q E Q T

850 870 890

TTCCAGCTGCTGAAGCTGTGGAAACATCAAAACAGAGACCAGGAAATGGTGAAGAAGATC

F Q L L K L W K H Q N R D Q E M V K K I

910 930 950

ATCCAAGACATTGACCTCTGTGAAAGCAGCGTGCAGCGGCATCTCGGCCACTCGAACCTC

I Q D I D L C E S S V Q R H L G H S **N** L

970 990 1010

ACCACAGAGCAGCTTCTTGCCTTGATGGAGAGCCTGCCTGGGAAGAAGATCAGCCCAGAA

T T E Q L L A L M E S L P G K K I S P E

1030 1050 1070

GAGATTGAGAGAACGAGAAAGACCTGCAAATCGAGCGAGCAGCTCCTGAAGCTACTCAGT

E I E R T R K T C K S S E Q L L K L L S

1090 1110 1130

TTATGGAGGATCAAAAATGGTGACCAAGACACCTTGAAGGGCCTGATGTATGCCCTCAAG

L W R I K N G D Q D T L K G L M Y A L K

1150 1170 1190

CACTTGAAAACATCCCACTTTCCCAAAACTGTCACCCACAGTCTGAGGAAGACCATGAGG

H L K T S H F P K T V T H S L R K T M R

1210 1230 1250

TTCCTGCACAGCTTCACAATGTACAGACTGTATCAGAAGCTCTTTTTAGAAATGATAGGG

F L H S F T M Y R L Y Q K L F L E M I G

1270 1290 1310

AATCAGGTTCAATCCGTGAAAATAAGCTGCTTATAACTAGGAATGGTCACTGGGCTGTTT

N Q V Q S V K I S C L

CTTCA

FIG.9C

10 30 50
GTATATATAACGTGATGAGCGTACGGGTGCGGAGACGCACCGGAGCGCTCGCCCAGCCGC

70 90 110
CGYCTCCAAGCCCCTGAGGTTTCCGGGGACCACAATGAACAAGTTGCTGTGCTGCGCGCT
M N K L L C C A L

130 150 170
CGTGTTTCTGGACATCTCCATTAAGTGGACCACCCAGGAAACGTTTCCTCCAAAGTACCT
V F L D I S I K W T T Q E T F P P K Y L

190 210 230
TCATTATGACGAAGAAACCTCTCATCAGCTGTTGTGTGACAAATGTCCTCCTGGTACCTA
H Y D E E T S H Q L L C D K C P P G T Y

250 270 290
CCTAAAACAACACTGTACAGCAAAGTGGAAGACCGTGTGCGCCCCTTGCCCTGACCACTA
L K Q H C T A K W K T V C A P C P D H Y

310 330 350
CTACACAGACAGCTGGCACACCAGTGACGAGTGTCTATACTGCAGCCCCGTGTGCAAGGA
Y T D S W H T S D E C L Y C S P V C K E

370 390 410
GCTGCAGTACGTCAAGCAGGAGTGCAATCGCACCCACAACCGCGTGTGCGAATGCAAGGA
L Q Y V K Q E C **N** R T H N R V C E C K E

430 450 470
AGGGCGCTACCTTGAGATAGAGTTCTGCTTGAAACATAGGAGCTGCCCTCCTGGATTTGG
G R Y L E I E F C L K H R S C P P G F G

490 510 530
AGTGGTGCAAGCTGGAACCCCAGAGCGAAATACAGTTTGCAAAAGATGTCCAGATGGGTT
V V Q A G T P E R N T V C K R C P D G F

550 570 590
CTTCTCAAATGAGACGTCATCTAAAGCACCCTGTAGAAAACACACAAATTGCAGTGTCTT
F S **N** E T S S K A P C R K H T **N** C S V F

610 630 650
TGGTCTCCTGCTAACTCAGAAAGGAAATGCAACACACGACAACATATGTTCCGGAAACAG
G L L L T Q K G **N** A T H D N I C S G N S

670 690 710
TGAATCAACTCAAAAATGTGGAATAGATGTTACCCTGTGTGAGGAGGCATTCTTCAGGTT
E S T Q K C G I D V T L C E E A F F R F

730 750 770
TGCTGTTCCTACAAAGTTTACGCCTAACTGGCTTAGTGTCTTGGTAGACAATTTGCCTGG
A V P T K F T P N W L S V L V D N L P G

FIG.9D

```
        790                           810                           830
CACCAAAGTAAACGCAGAGAGTGTAGAGAGGATAAAACGGCAACACAGCTCACAAGAACA
 T   K   V   N   A   E   S   V   E   R   I   K   R   Q   H   S   S   Q   E   Q
        850                           870                           890
GACTTTCCAGCTGCTGAAGTTATGGAAACATCAAAACAAAGACCAAGATATAGTCAAGAA
 T   F   Q   L   L   K   L   W   K   H   Q   N   K   D   Q   D   I   V   K   K
        910                           930                           950
GATCATCCAAGATATTGACCTCTGTGAAAACAGCGTGCAGCGGCACATTGGACATGCTAA
 I   I   Q   D   I   D   L   C   E   N   S   V   Q   R   H   I   G   H   A   N
        970                           990                          1010
CCTCACCTTCGAGCAGCTTCGTAGCTTGATGGAAAGCTTACCGGGAAAGAAAGTGGGAGC
 L   T   F   E   Q   L   R   S   L   M   E   S   L   P   G   K   K   V   G   A
       1030                          1050                          1070
AGAAGACATTGAAAAAACAATAAAGGCATGCAAACCCAGTGACCAGATCCTGAAGCTGCT
 E   D   I   E   K   T   I   K   A   C   K   P   S   D   Q   I   L   K   L   L
       1090                          1110                          1130
CAGTTTGTGGCGAATAAAAAATGGCGACCAAGACACCTTGAAGGGCCTAATGCACGCACT
 S   L   W   R   I   K   N   G   D   Q   D   T   L   K   G   L   M   H   A   L
       1150                          1170                          1190
AAAGCACTCAAAGACGTACCACTTTCCCAAAACTGTCACTCAGAGTCTAAAGAAGACCAT
 K   H   S   K   T   Y   H   F   P   K   T   V   T   Q   S   L   K   K   T   I
       1210                          1230                          1250
CAGGTTCCTTCACAGCTTCACAATGTACAAATTGTATCAGAAGTTATTTTTAGAAATGAT
 R   F   L   H   S   F   T   M   Y   K   L   Y   Q   K   L   F   L   E   M   I
       1270                          1290                          1310
AGGTAACCAGGTCCAATCAGTAAAAATAAGCTGCTTATAACTGGAAATGGCCATTGAGCT
 G   N   Q   V   Q   S   V   K   I   S   C   L
       1330                          1350
GTTTCCTCACAATTGGCGAGATCCCATGGATGATAA
```

FIG.9E

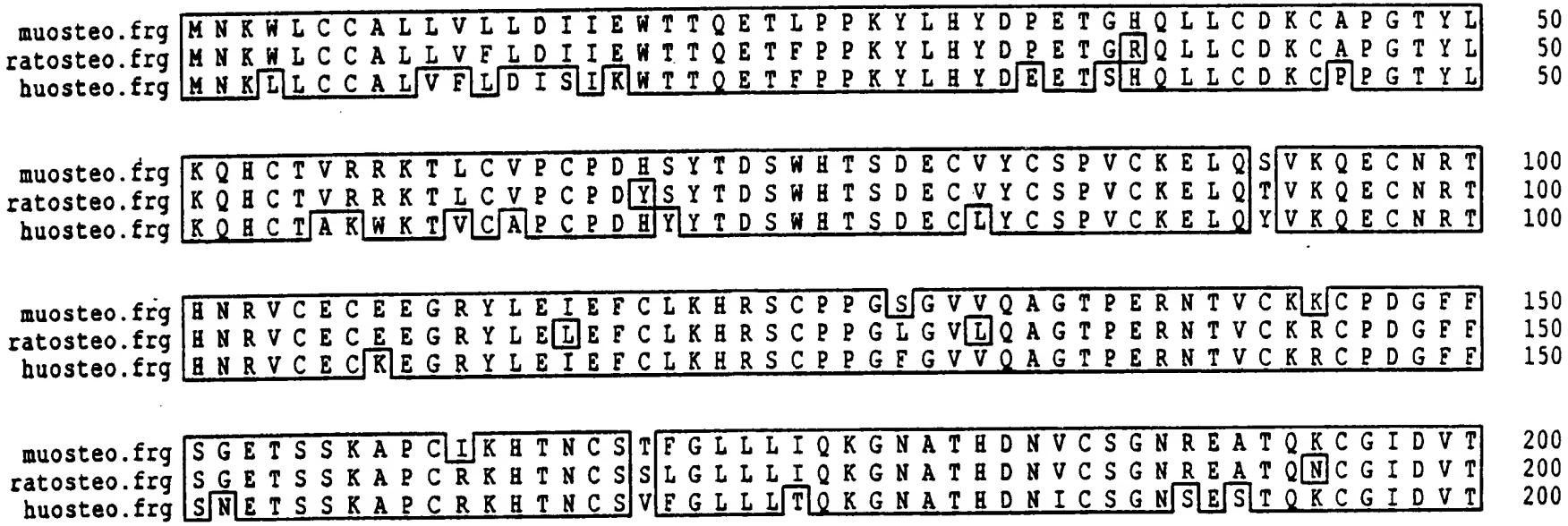


FIG.9F

```
muosteo.frg   L C E E A F F R F A V P T K I I P N W L S V L V D S L P G T K V N A E S V E R I K R R H S S Q E Q T   250
ratosteo.frg  L C E E A F F R F A V P T K I I P N W L S V L V D S L P G T K V N A E S V E R I K R R H S S Q E Q T   250
huosteo.frg   L C E E A F F R F A V P T K F T P N W L S V L V D N L P G T K V N A E S V E R I K R Q H S S Q E Q T   250

muosteo.frg   F Q L L K L W K H Q N R D Q E M V K K I I Q D I D L C E S S V Q R H L G H S N L T T E Q L L A L M E   300
ratosteo.frg  F Q L L K L W K H Q N R D Q E M V K K I I Q D I D L C E S S V Q R H I G H A N L T T E Q L R I L M E   300
huosteo.frg   F Q L L K L W K H Q N K D Q D I V K K I I Q D I D L C E N S V Q R H I G H A N L T F E Q L R S L M E   300

muosteo.frg   S L P G K K I S P E E I E R T R K T C K S S E Q L L K L L S L W R I K N G D Q D T L K G L M Y A L K   350
ratosteo.frg  S L P G K K I S P D E I E R T R K T C K P S E Q L L K L L S L W R I K N G D Q D T L K G L M Y A L K   350
huosteo.frg   S L P G K K V G A E D I E K T I K A C K P S D Q I L K L L S L W R I K N G D Q D T L K G L M H A L K   350

muosteo.frg   H L K T S H F P K T V T H S L R K T M R F L H S F T M Y R L Y Q K L F L E M I G N Q V Q S V K I S C   400
ratosteo.frg  H L K A Y H F P K T V T H S L R K T I R F L H S F T M Y R L Y Q K L F L E M I G N Q V Q S V K I S C   400
huosteo.frg   H S K T Y H F P K T V T Q S L K K T I R F L H S F T M Y K L Y Q K L F L E M I G N Q V Q S V K I S C   400

muosteo.frg   L   401
ratosteo.frg  L   401
huosteo.frg   L   401
```

FIG.10

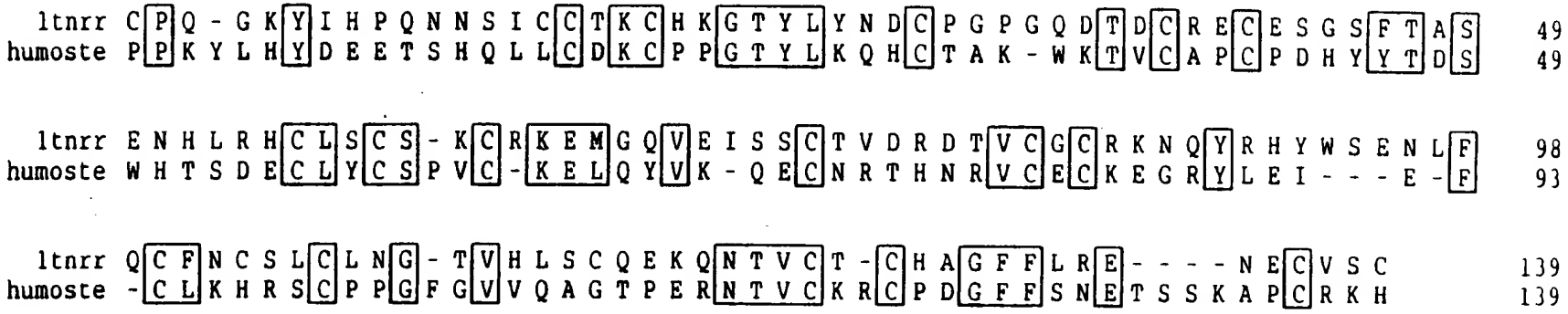


FIG. II

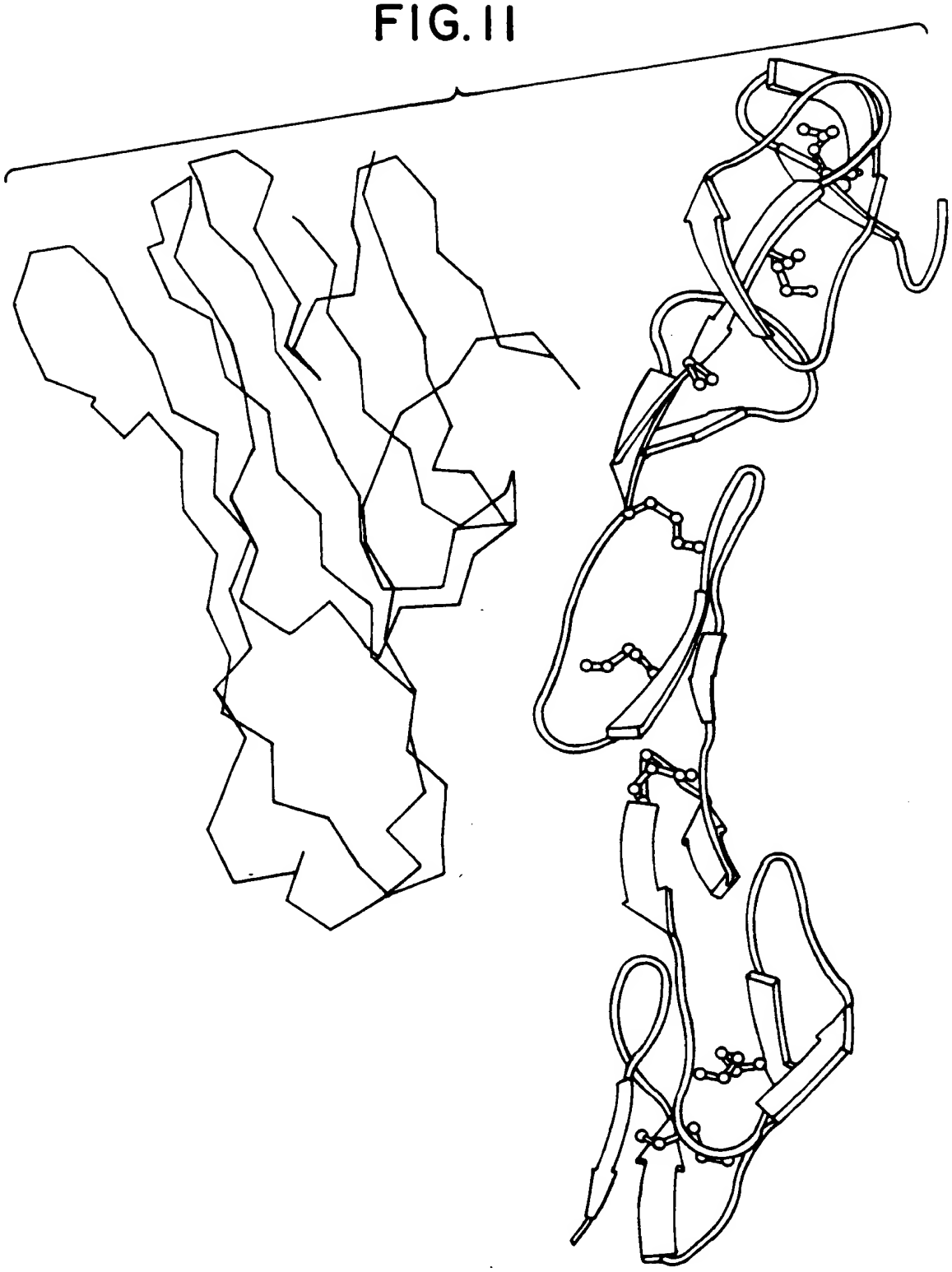


FIG.12A

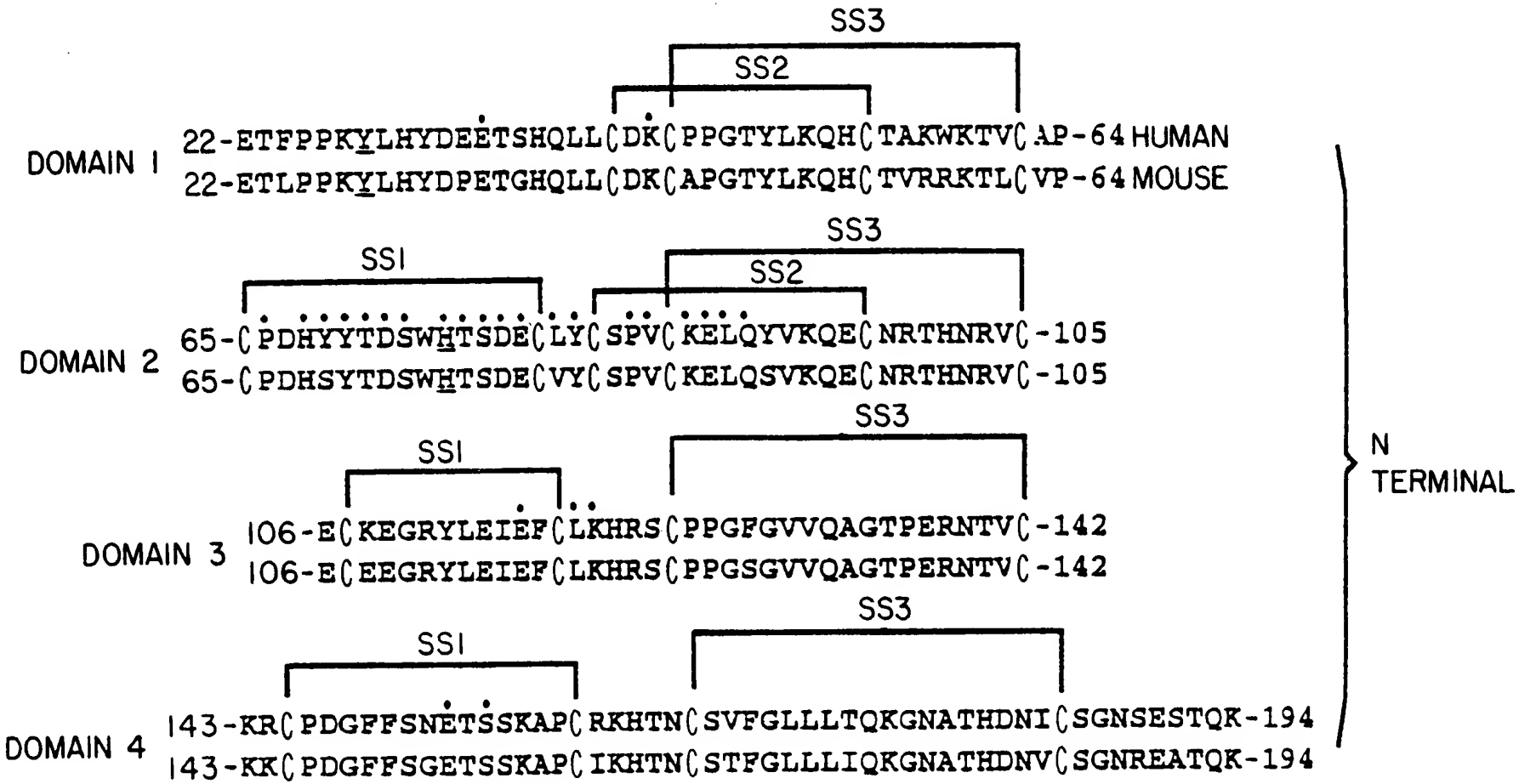


FIG.12B

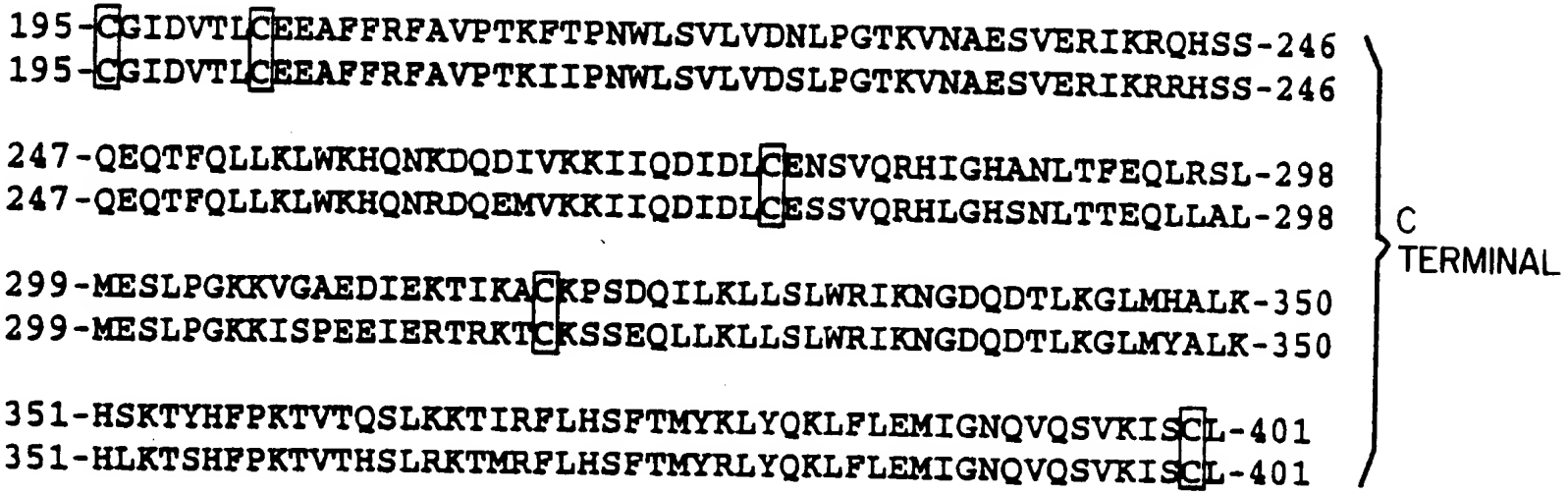


FIG.13A

FIG.13B

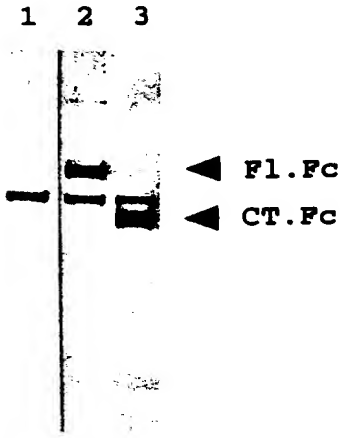


FIG.13C

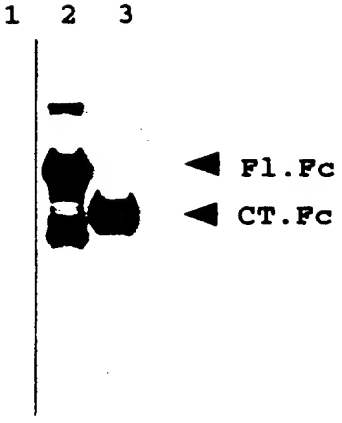


FIG.14A

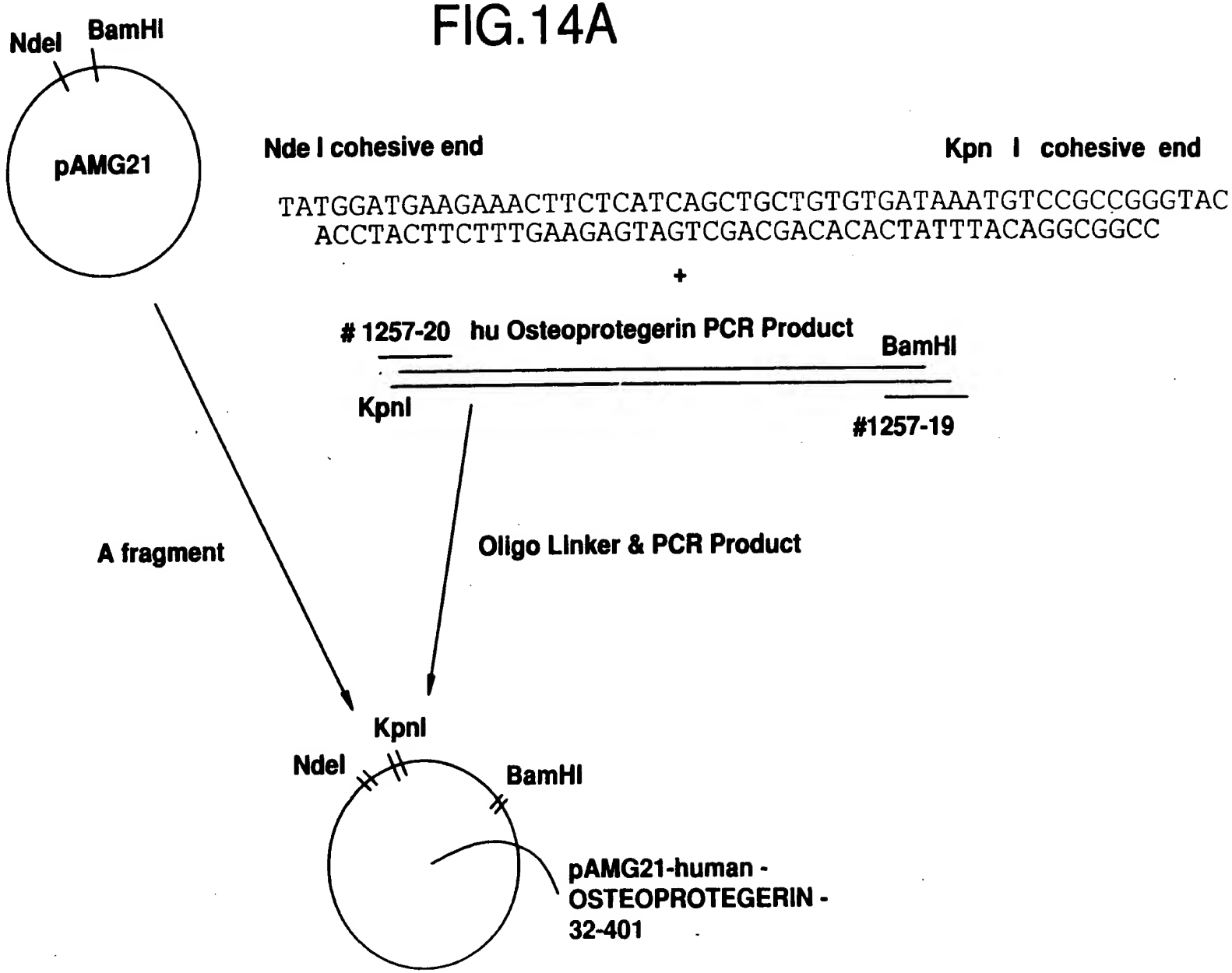


FIG.14B

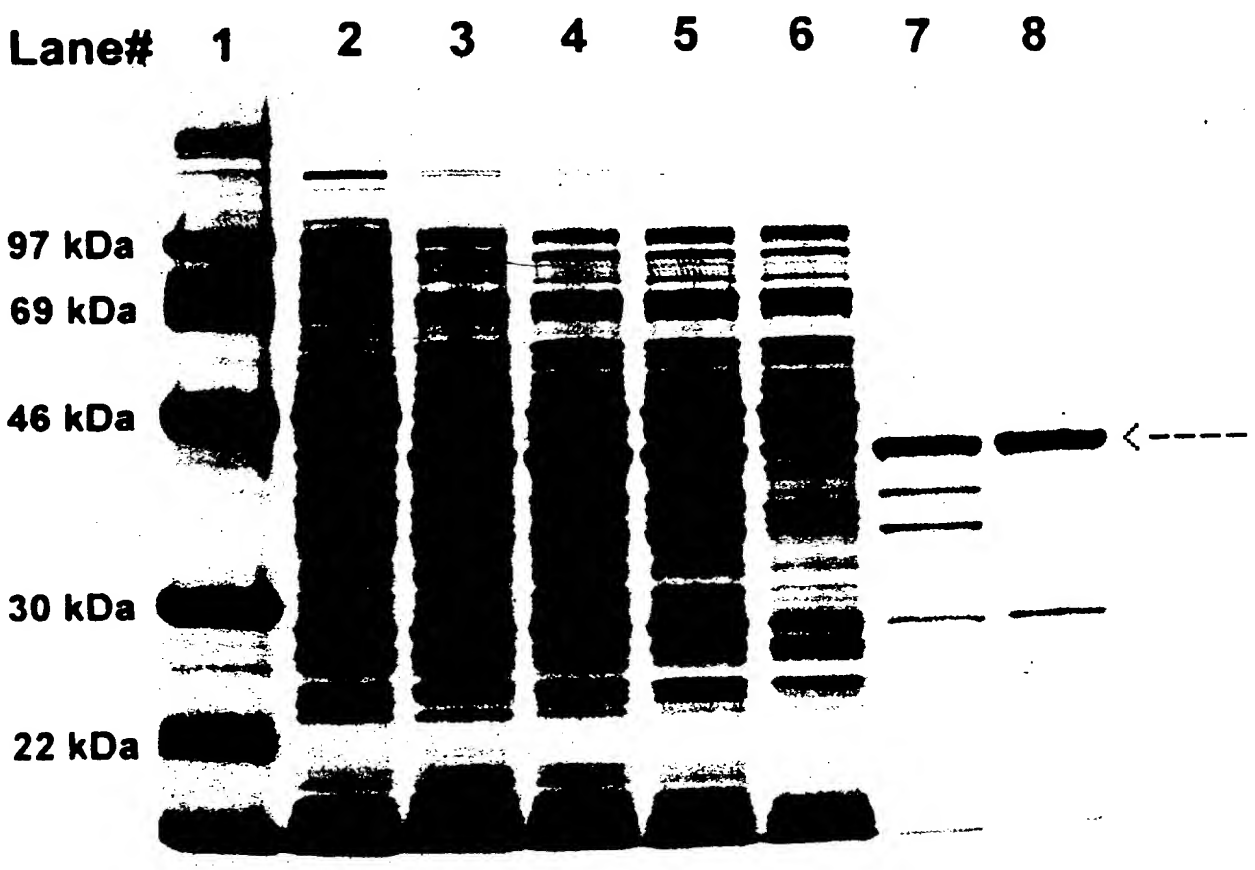


FIG.15

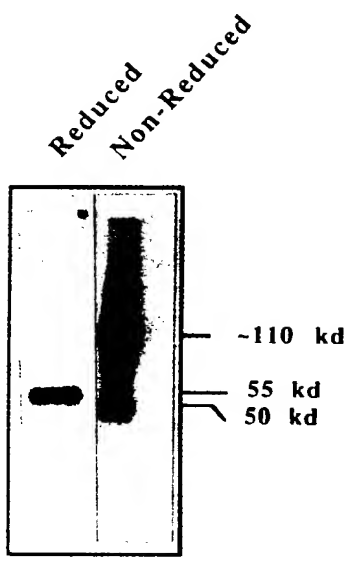


FIG.16A

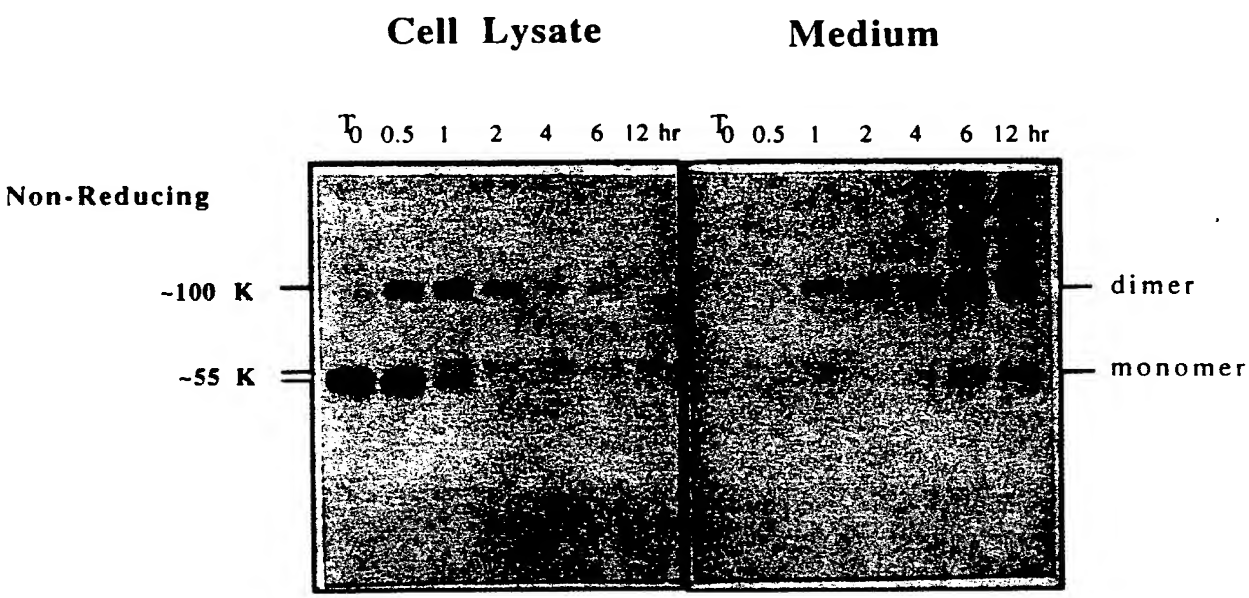


FIG.16B

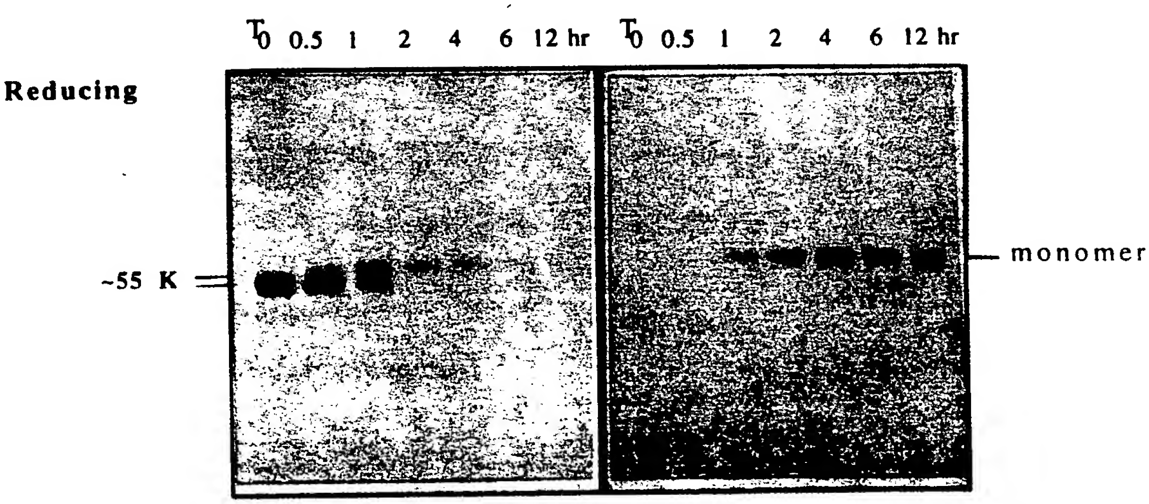


FIG.17

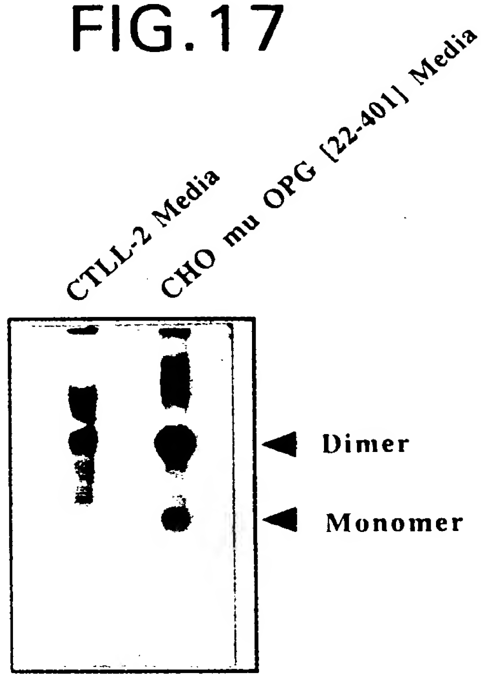


FIG.18

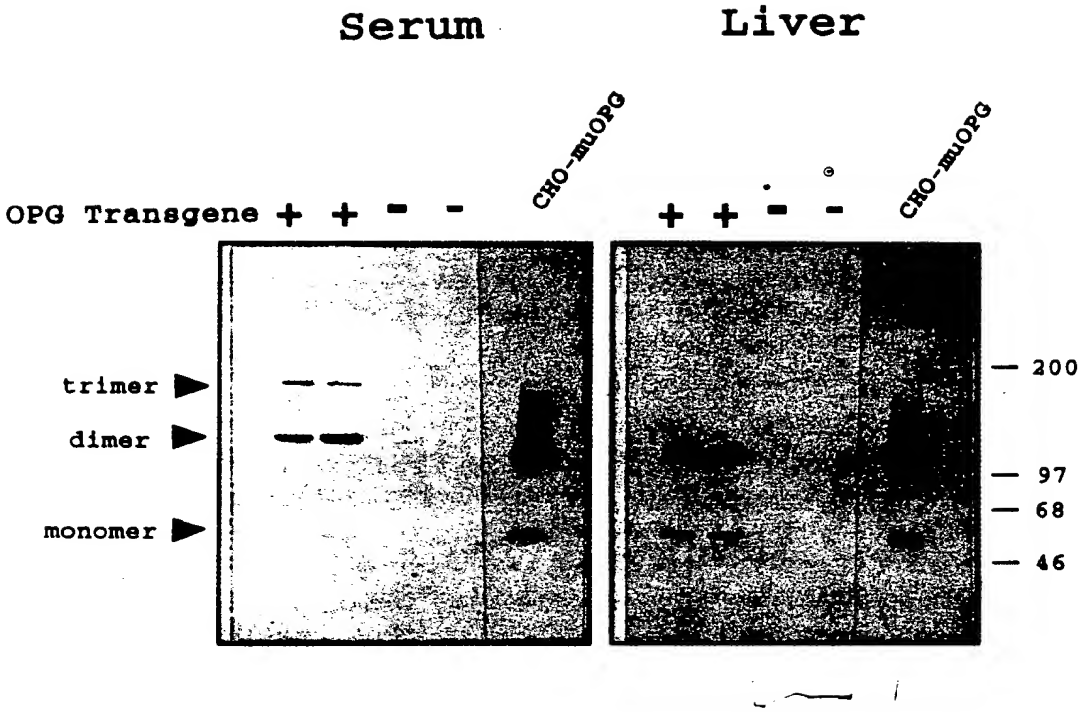

Serum
Liver
CHO-muOPG
CHO-muOPG
OPG Transgene + + - -
+ + - -
trimer
dimer
monomer
200
97
68
46

FIG.19A

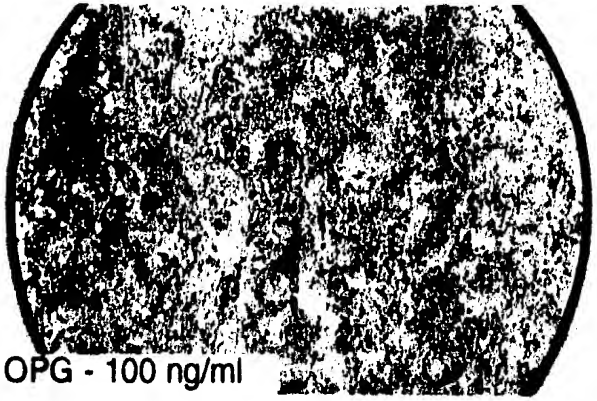


FIG.19B

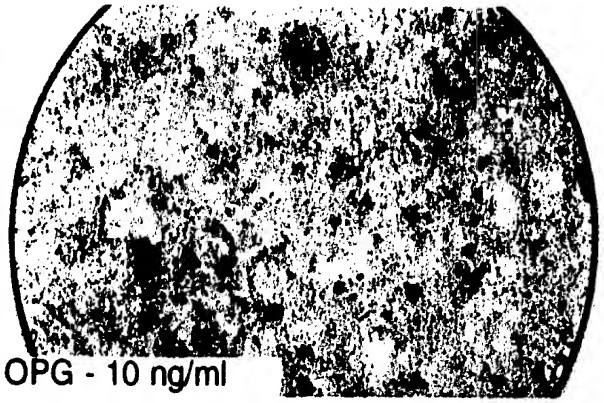


FIG.19C

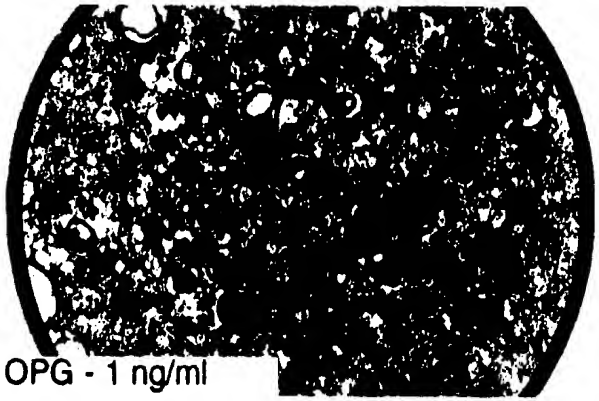


FIG.19D

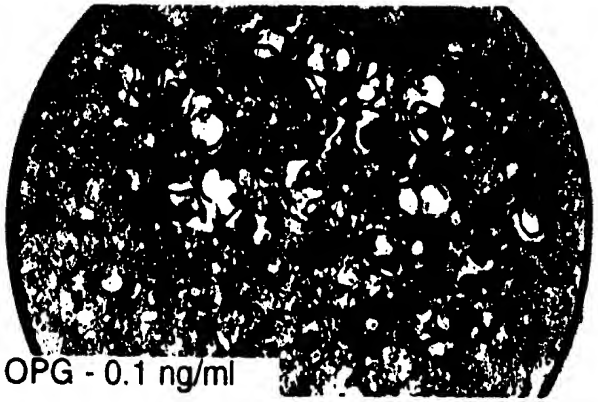


FIG.19E

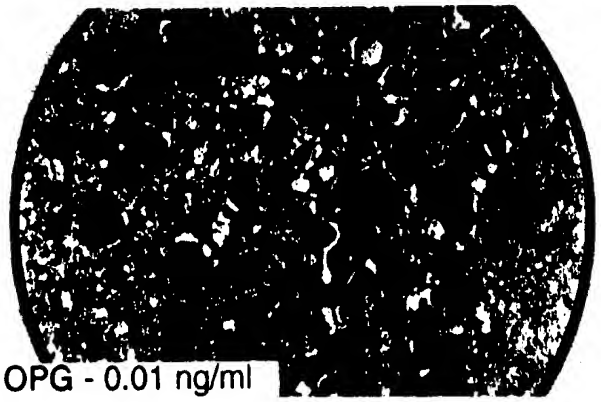


FIG.19F

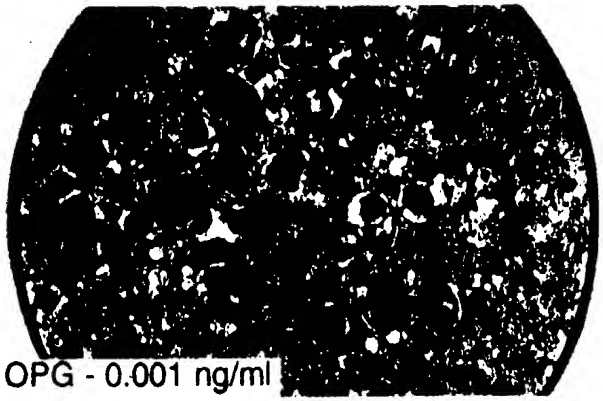


FIG.19G

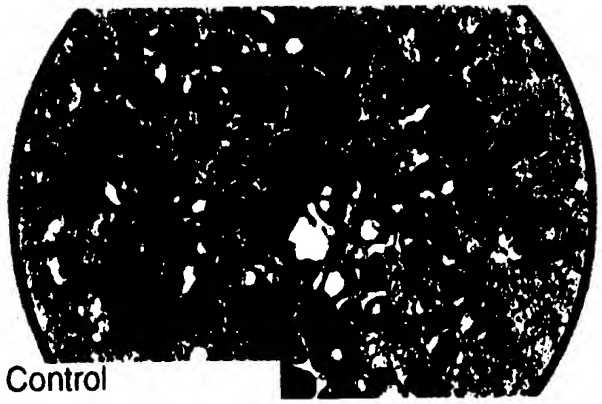


FIG.20

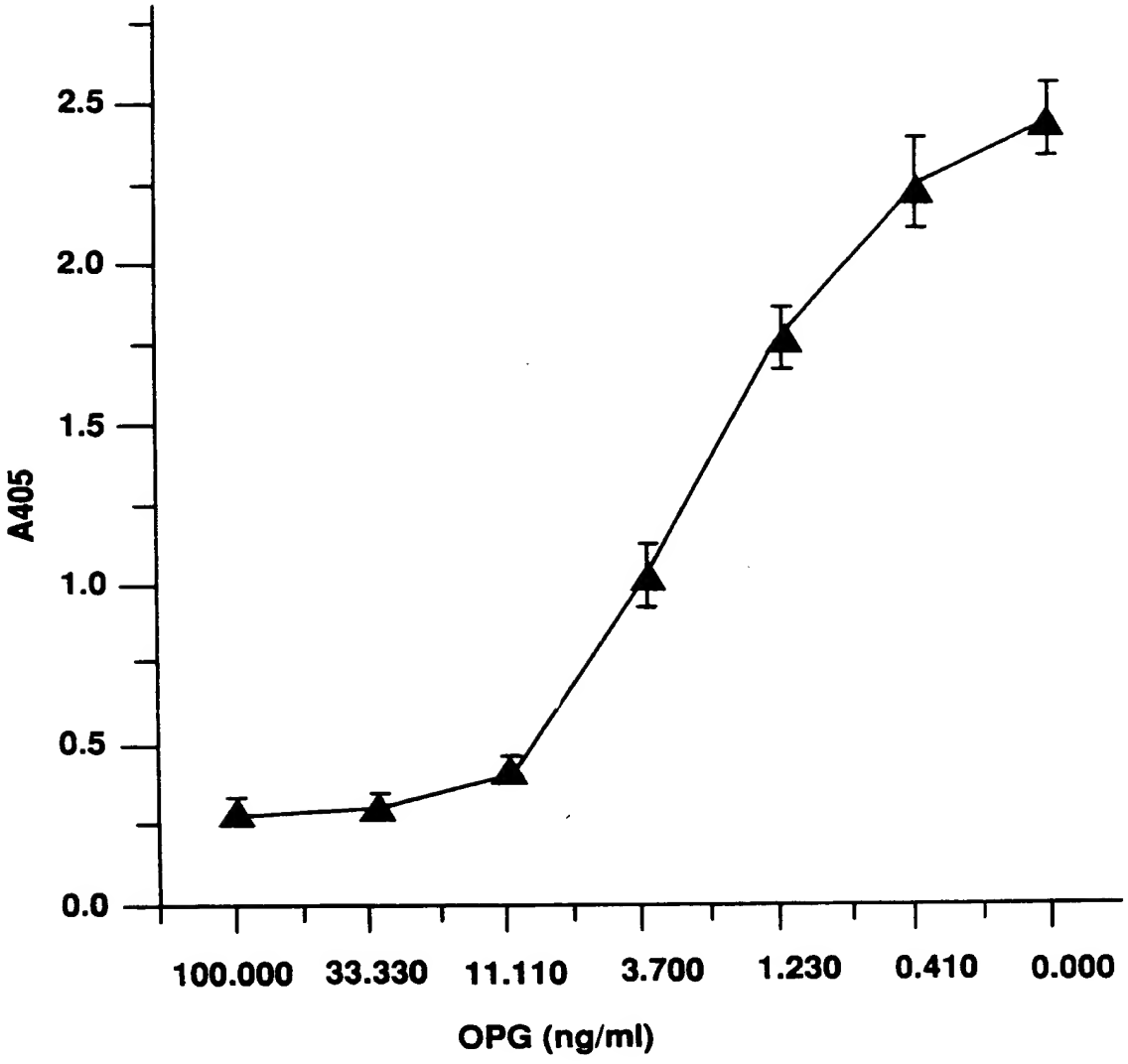
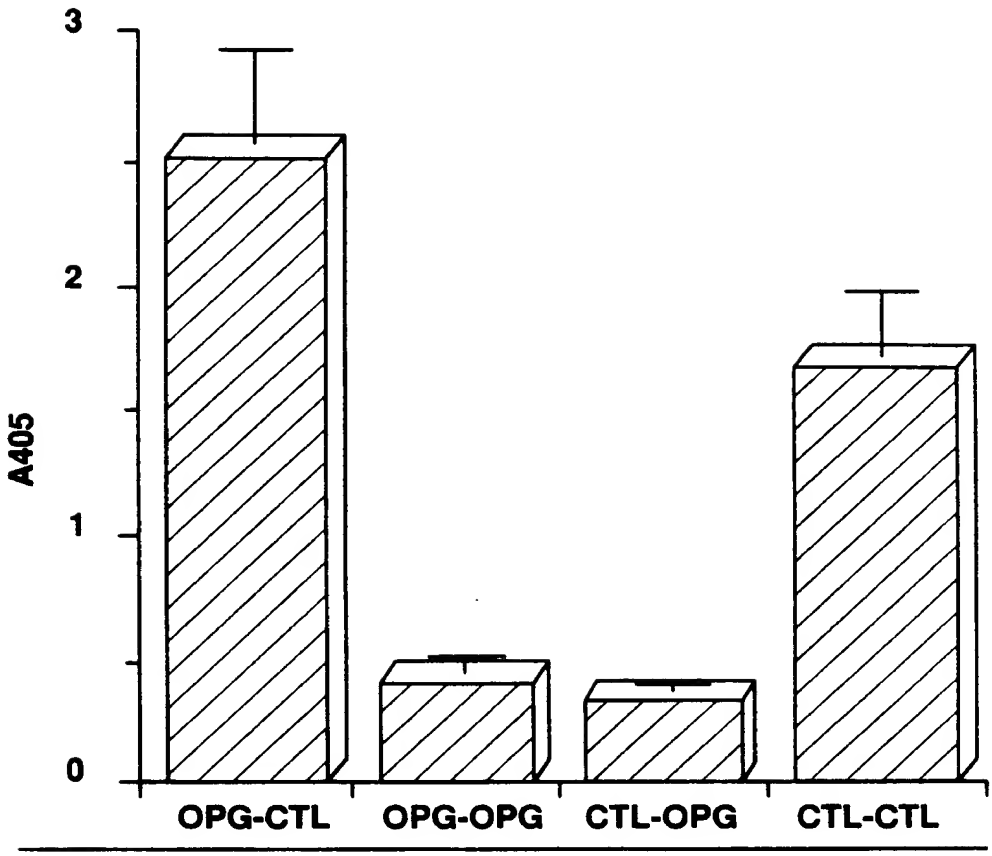

2.5
2.0
1.5
1.0
0.5
0.0
A405
100.000
33.330
11.110
3.700
1.230
0.410
0.000
OPG (ng/ml)

FIG.21



Legend

Growth	Intermediate	Terminal
Bone marrow cells CSF -1	PGE2 + CSF-1	ST2 cells 1,25 (OH)2 D3 Dexamethasone

	4 days	2 days	8 - 10 days
Groups		OPG	OPG
CTL - CTL		– – –	– – –
OPG - CTL		100 ng/ml	– – –
OPG - OPG		– – –	100 ng/ml
OPG - OPG		100 ng/ml	100 ng/ml

FIG.22A

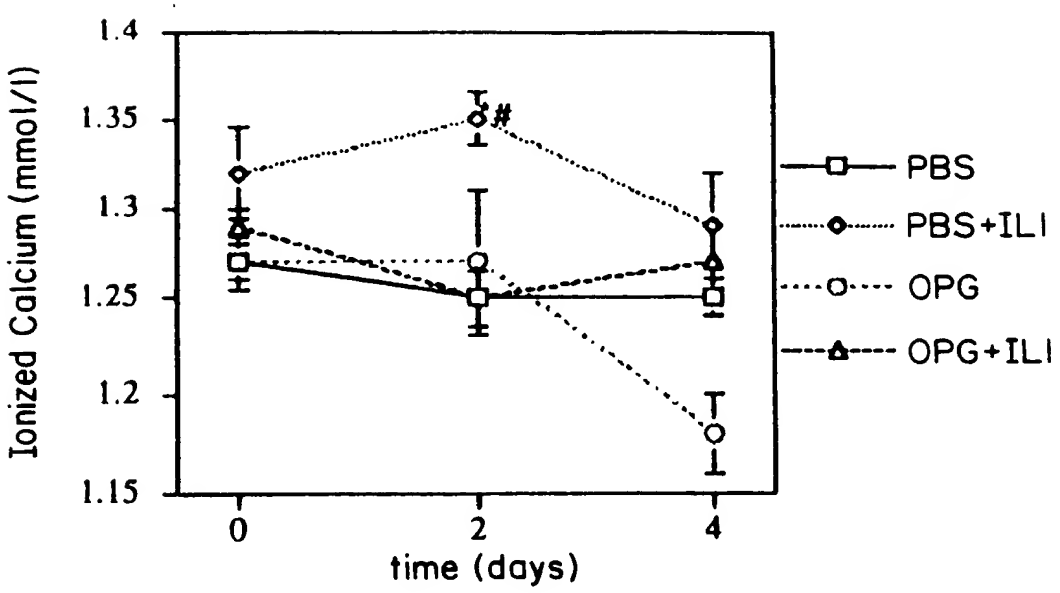
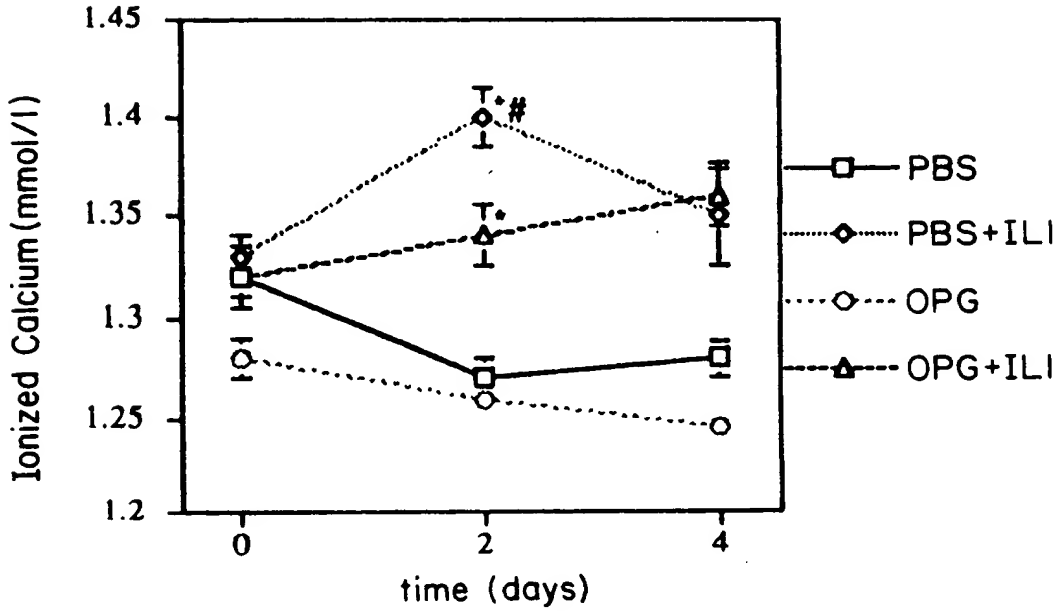


FIG.22B



* Different to PBS, $p < 0.05$
# Different to OPG + IL1, $p < 0.05$

FIG.23A

FIG.23B

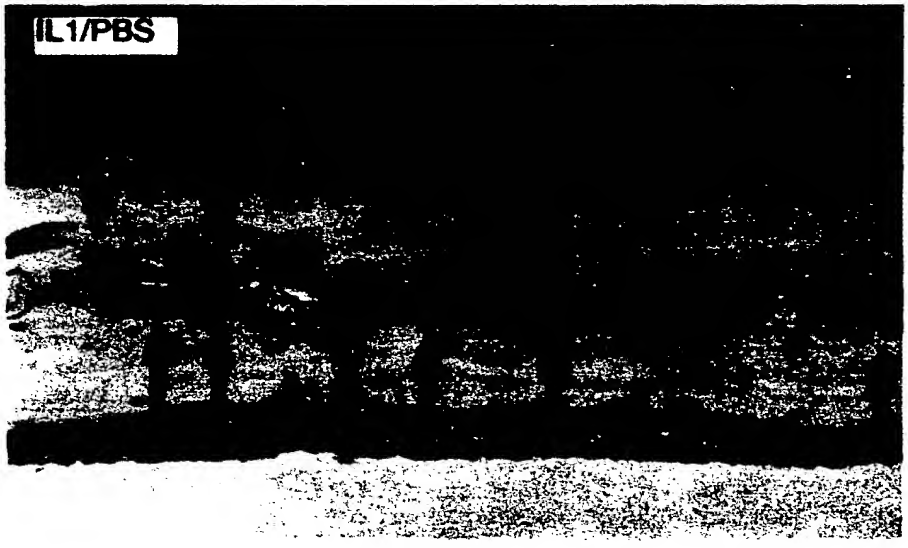


FIG.23C

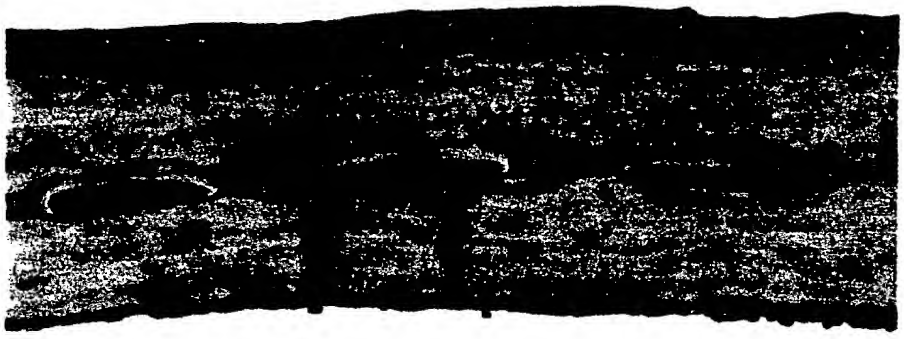
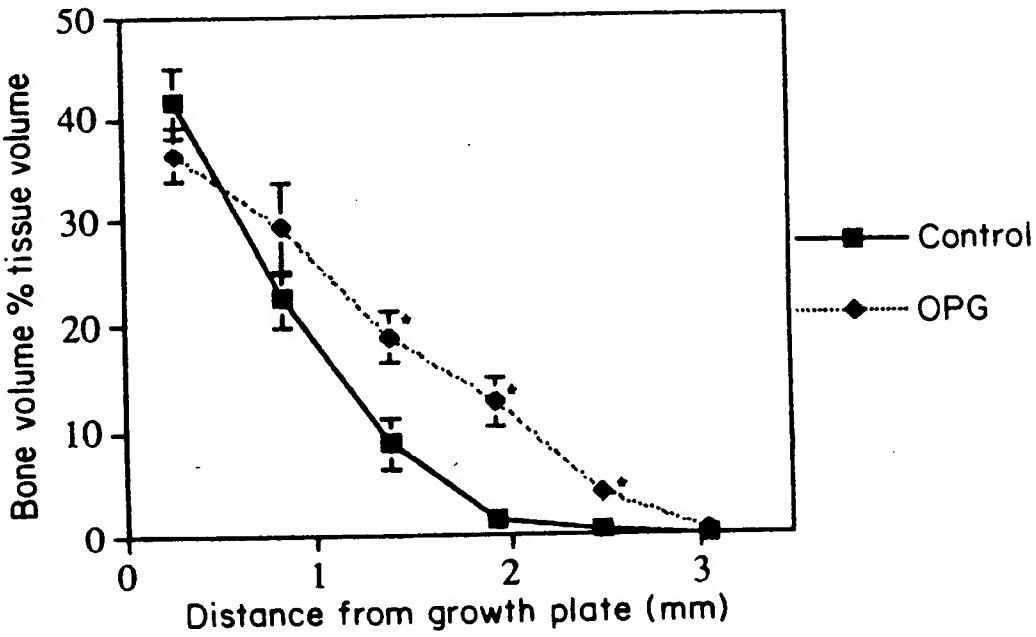


FIG.23D

FIG.24A

FIG.24B

FIG.25



* Different to control $p < 0.01$

FIG.26A

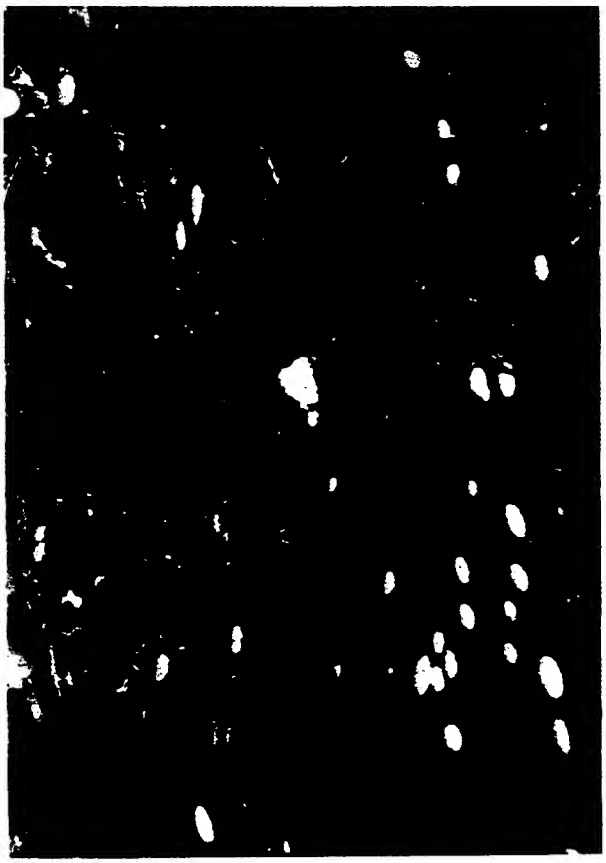


FIG.26.B

FIG.27

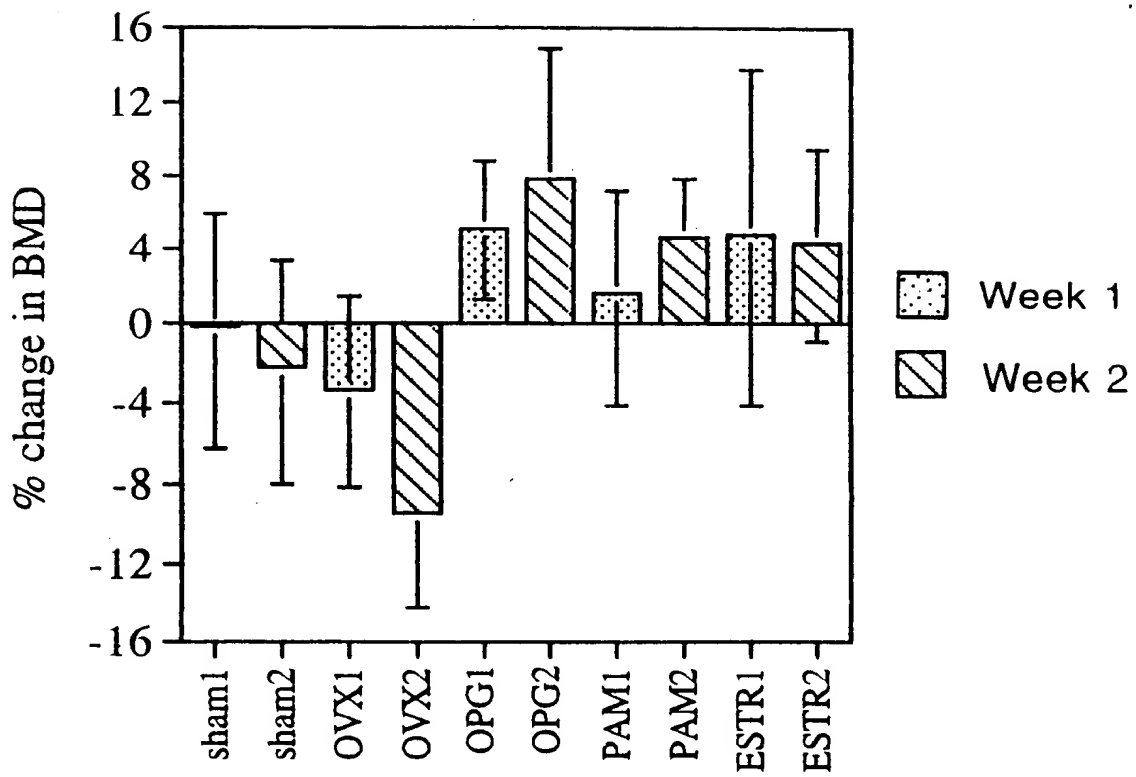
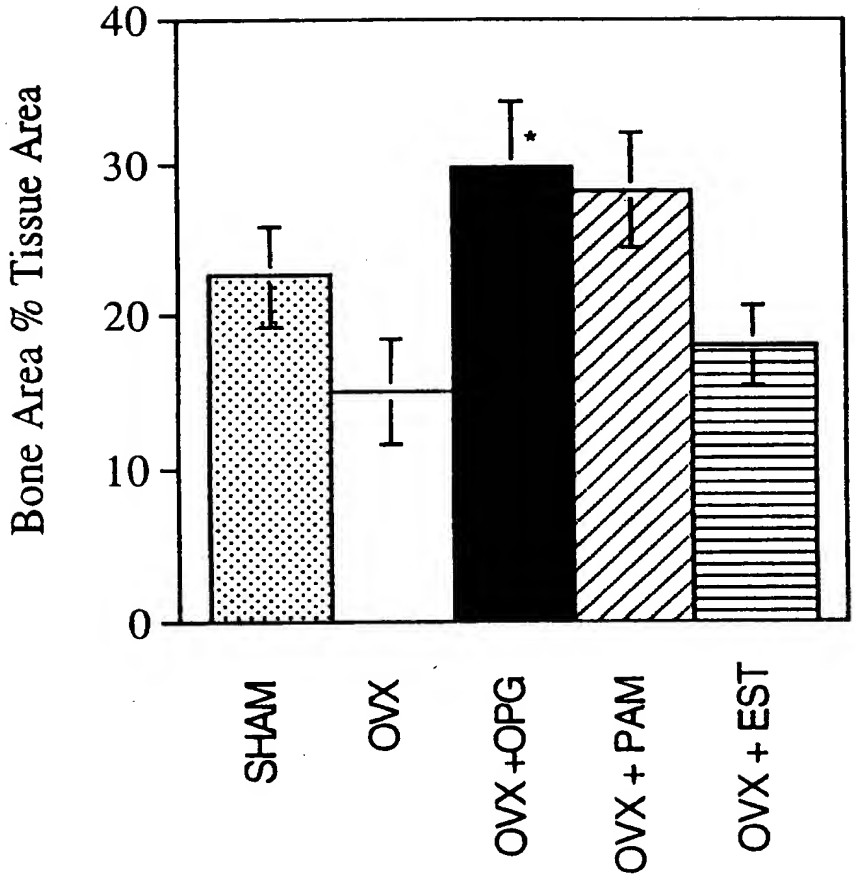

16
12
8
4
0
-4
-8
-12
-16
% change in BMD
sham1
sham2
OVX1
OVX2
OPG1
OPG2
PAM1
PAM2
ESTR1
ESTR2
Week 1
Week 2

FIG.28



* Different to OVX $p < 0.05$